AUGUST 21, 1937

Railway Age

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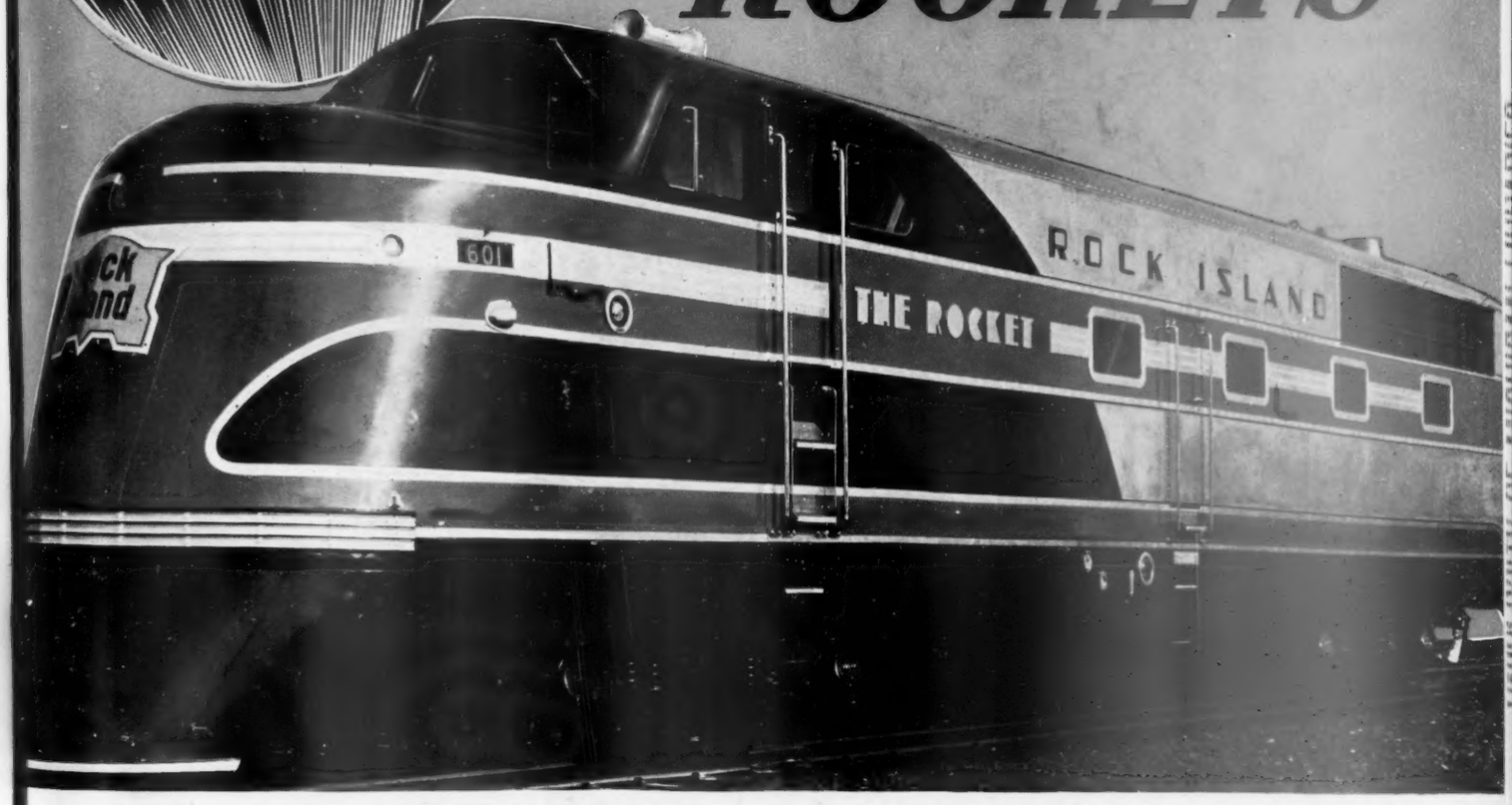
Rock Island ROCKET

6 NEW "ROCKETS"



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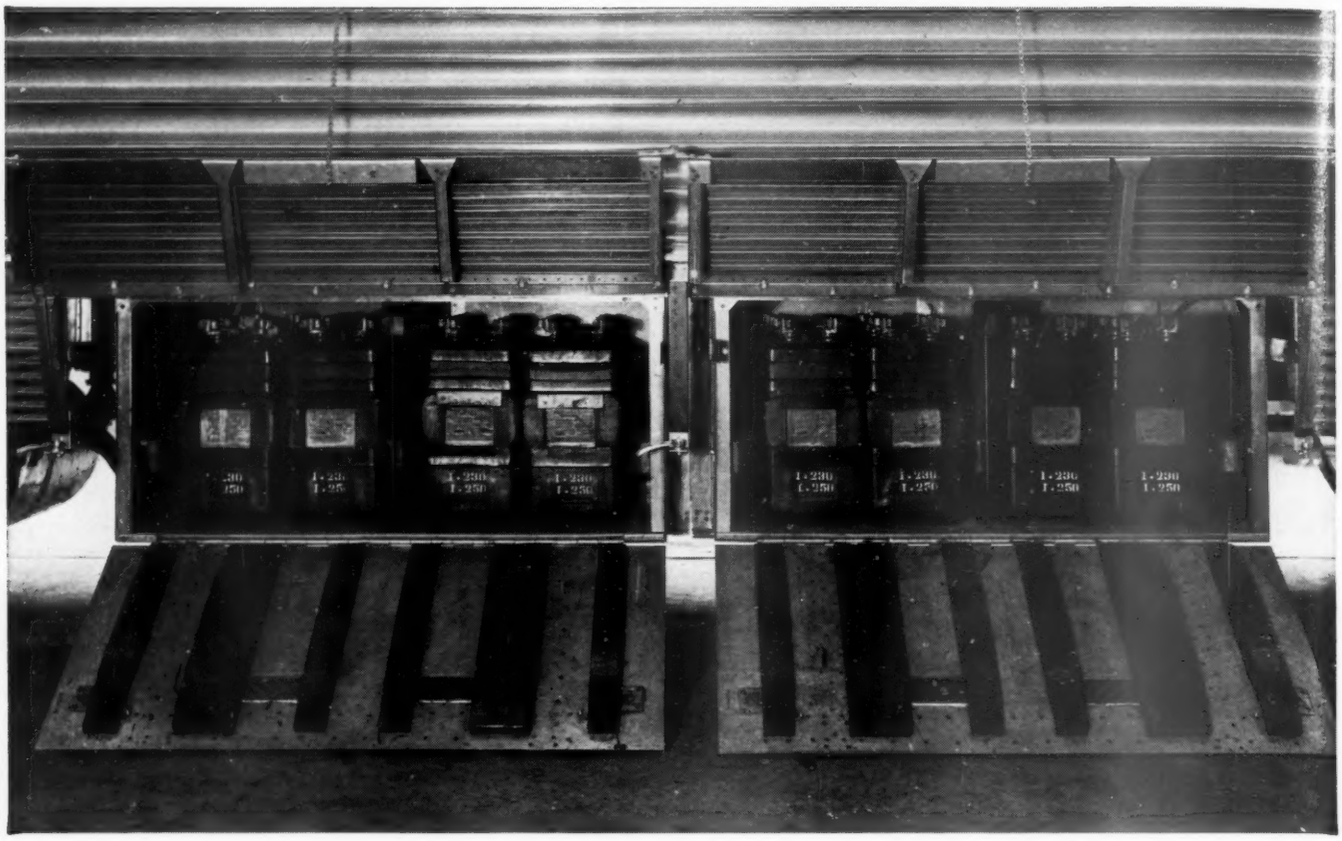

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With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 103 August 21, 1937 No. 8

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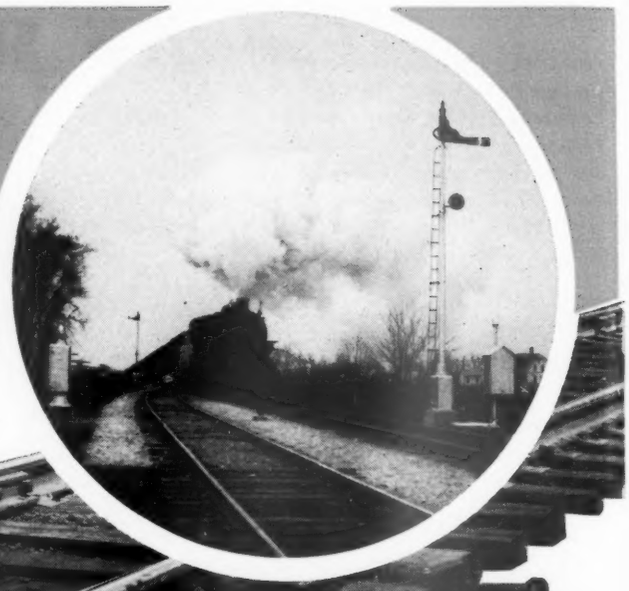
MINIMIZE COSTLY TRAIN STOPS!



STYLE S-2 MECHANICAL FACING POINT LOCK

AS a result of installation of "Union" Style S-2 Mechanical Facing Point Locks on spring switches at one end of twelve passing sidings, in combination with a block office at the other end, on 106 miles of single-track between Hamlet, N. C., and Columbia, S. C., the Seaboard Air Line has reduced train delays and the number of train stops to a minimum. Non-stop meets are now a common occurence on this territory.* » » » » » » »

There are locations on your road where installation of "Union" Style S-2 or the S-3 Mechanical Facing Point Lock, if a switch target is desired, will increase operating efficiency by reducing train delays and stops, with a large saving in operating costs. Our nearest office will be glad to furnish additional data. Plan for that installation now. » » » » » » »

*Railway Age, July 10, 1937, p. 36

1308

1881 **Union Switch & Signal Co.** 1937

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

CARLOADINGS: In the August 7 week revenue freight loadings totaled 770 thousand cars, an increase of 5.7 per cent over those of the corresponding week last year.

●

WOOD VIADUCT: Use of wood in the construction of a five-span viaduct carrying a feeder highway over the main line of the Milwaukee in North Dakota is described in an article herein. Practically all of the wood was treated with creosote, a large proportion being framed first.

●

MEXICO'S NEW LINES: Five major projects of new line construction are going forward in Mexico, with a total mileage of approximately 1,000 involved. A map published herein shows the location of these lines and accompanying text gives further details to the work now in progress.

●

MORE SUPERHEAT?: Would a higher degree of superheat increase cylinder and boiler efficiency and reduce fuel consumption? In an article herein, H. B. Oatley analyzes the evidence bearing on this question and arrives at an affirmative answer—provided changes in superheating do not destroy the harmony of the locomotive design as a whole and thus offset the savings.

●

"IRON HOBBYHORSE": Under this title in the current Saturday Evening Post, a well-known writer (J. C. Furnas, who won fame by his "Sudden Death" article on highway accidents) outlines the interests and activities of railroad "fans"; and incidentally points out their value to the railroad industry as builders of good will.

●

JULY EARNINGS: The increase in earnings over those of last year, which the roads have been showing for months, is withering away. In July, according to preliminary reports from three-quarters of the roads, operating revenues were only 2.6 per cent above July last year. Freight revenues were only 1.1 per cent above last year, while passenger earnings were 7.2 per cent higher.

●

S. F. "CHALLENGER": The Union Pacific, Southern Pacific and Chicago & North Western will on September 15 inaugurate "Challenger" trains on the Chicago-San Francisco run—a counterpart in every way to the popular tourist-coach service now provided between Chicago and Los Angeles.

●

TIME TO FIGHT: The railroads are in no condition to stand up under the burden which the train limit bill and the large increases in wages the train service unions are demanding would put upon them. The leading editorial herein urges, if the improvement in public good will toward the railroads has any real meaning, that it ought to serve to prevent such an injustice being placed upon the carriers; and hence that the railroads should resist these impositions vigorously and should carry their case to the public by advertising and the radio. The union leaders, it is stated, are quite nonchalant about whether the railroads make any money or not, holding that that is the managements' worry. That being the case, is it not managements' duty to defend the industry's earning power—which they will not be doing if they accept the train service unions' exactions lying down?

●

STEEL ROAD MERGER: As a further step in consolidating the U. S. Steel Corporation's subsidiary railroads in the iron range country, the new Duluth, Missabe & Iron Range (a consolidation of the former Duluth, Missabe & Northern and the Spirit Lake Transfer) has applied to the I.C.C. for authority to acquire the Duluth & Iron Range and the Interstate Transfer. The combined system will have a track mileage totaling 1,301.

●

JOB INSURANCE: The railway labor executives are preparing to cut themselves another slice of the railroad pie in the form of job insurance legislation which they plan to ask Congress to enact next term. The kitty would, according to the labor leaders' plans, be provided entirely by the railroads by a tax of 3 per cent on payrolls.

●

R. E. A. STATUS: The Interstate Commerce Commission has made public a proposed report by Examiner Kephart who has made an inquiry to determine to what extent the Railway Express Agency comes under Part I (the railroad part) of the Interstate Commerce Act, and to what, if any, extent it should come under Part II (the motor carrier portion). In general the examiner believes that the R. E. A. should come under Part I, but that truck operations under contract for railroads or outside of c. and d. zones fall under Part II. The R. E. A. has contended that all its truck operations come under Part I.

●

TRAIN LIMIT DEFERRED: The major piece of "make work" legislation, the train limit bill, so dear to the hearts of such well-known champions of collective bargaining (i. e., when political action isn't easier) as A. F. Whitney, has been deferred until January by the House Committee on Interstate Commerce. It is also understood that public hearings will be held. Such hearings ought to provide an opportunity for demonstrating to the nation the principle at stake here—namely, the "freezing" of efficiency at a point below the present level and prohibition of any improvement in it for all time to come. Where then could there by any "increased productivity" on the part of railroad labor on which to base demands for increased pay?

P. R. R. STORES METHODS: Storekeepers and their forces on the Pennsy are carried on the payrolls of the material-using departments, although they receive instructions from the stores department in the ordering, handling and disbursing of materials. An article herein describes the supply methods of this road, which include a number of unusual features.

●

SMALL STATIONS: One railway has developed a form for reducing the work performed at small stations to units, so a definite measure may be had of the size of staff required; and so that performance of such stations may be fairly compared. These and other questions affecting small station management, from the point of view of the superintendent, are given in a report which appears herein.

●

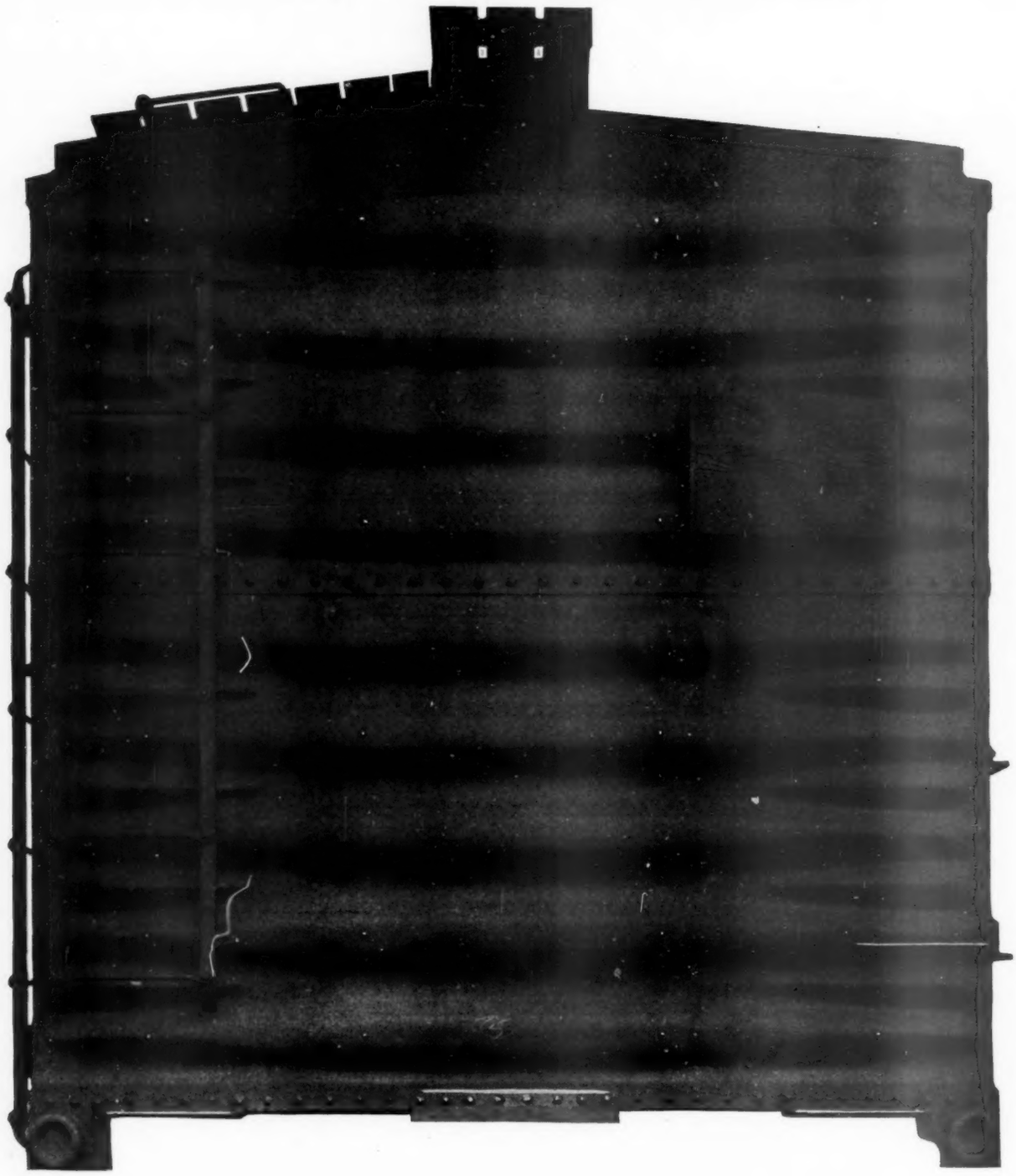
CONSISTS: To speed up the transmission of wheel report-consists (in order to expedite trains through terminals and furnish passing reports more promptly for the benefit of shippers) the Missouri Pacific has recently installed teletype machines at Little Rock, North Little Rock and Texarkana, to transmit such reports to and from St. Louis. The system used, which is novel and was developed by the Mo. P., is described elsewhere herein.

●

SIGNAL BILL PASSES: The Senate on August 18 agreed to amendments made by the House of Representatives to the Signal Inspection Bill, principal among which was one placing under civil service regulations the inspectors to be hired. This "make work" bill was passed originally by the Senate on May 17 and, in the words of Representative Harlan who opposed it, will "open avenues to create useless and extravagant railroad expenditures, which will be added to public living costs." And still there are those who persist in believing that the unions' principal objective is the establishment of collective bargaining.

●

MORE "VAN" TROUBLE: The gentlemen who succeeded the late Messrs. Van Sweringen in control of their railroad "empire" are going to be snooped upon some more—this time by the I.C.C. The Wheeler committee having aired and search-lighted every detail of their transactions, the commission is now going to haul them up for another autopsy to see whether or not under existing legislation that body may not be able to say "come and he cometh" and "go and he goeth" to the Chesapeake and Alleghany Corporations—as it does to the railroads which, in theory at least, are "controlled" by Messrs. Young, Kolbe and Kirby. And, making the railroad career of these gentlemen still more eventful, a state court at Baltimore has permanently enjoined the merger of Alleghany and Chesapeake, a move about which the Securities Exchange Commission also seems to have its doubts.



WHEN THE DRAFT GEAR STOPS

THE DREADNAUGHT END STARTS

YIELDING UNDER EXTREME IMPACTS ONE FOOT
AS A CUSHION AGAINST THE SLIDING LOAD

RAILWAY AGE

Time to Fight

It has often been said, and there seems reason for believing it is true, that public sentiment toward the railways is now more favorable than for many years. Nevertheless developments are occurring and threatening to occur that are about as bad for the railways as any that could occur if public sentiment was overwhelmingly hostile. And these developments and threatened developments are as bad and may prove even worse for the public than for the railways. But there has not as yet been a sign of an uprising of public sentiment against them.

The future of the railways depends upon their net operating income. It determines their solvency. It determines their ability to make purchases of materials and equipment, and thereby the adequacy and quality of the service they can render to the public. Their net operating income in 1936 was $667,000,000. In the first six months of 1937 it increased 25 per cent. Continuance of this rate of increase would have made it $834,000,000 in 1937. There is strong reason now, however, for believing that even in the absence of advances in wages it would not have increased this much. The improvement in general business and consequent increase of freight loadings that occurred in the early part of the year are not being maintained. The increase of freight loadings averaged 15.6 per cent in the first twenty-two weeks of the year, and only 6.6 per cent in the ten weeks ending with August 7. This deceleration of the increase, if continued, would alone have caused retrenchments or a deceleration of the increase in net operating income.

Controversies of Vital Importance

In addition, however, advances in wages at the annual rate of $98,000,000 have been granted to the non-operating employees; the five train service brotherhoods are seeking advances that would amount to $110,000,000 annually; and the United States Senate passed without a record vote, and the House now has before it, a bill limiting the length of freight trains to seventy cars which it is estimated would increase annual operating expenses $150,000,000. It is impossible to believe that the railways will grant any advance in the wages of the train service employees without being virtually or actually forced to by the government. It is also exceedingly difficult to believe that the House will pass the train limit bill, upon which committee hearings are to be held and which therefore cannot be voted on until the next session of Congress. But there is involved in the controversies over these two matters a total of $260,000,000 in addition to the $98,000,000 wage increase already granted. It would be difficult to exaggerate what might happen to the railways if the train service brotherhoods should succeed in getting a substantial advance in wages and Congress should pass the train limit bill. It would depend partly on whether the gain in freight should continue to decelerate or should accelerate. Their net operating income might be reduced by all the proposed increases in expenses to what it was in 1935, or even in 1934, and the railways as a whole be pushed back almost where they were in the depths of the depression.

It may reasonably be asked, in view of such facts, why the railways already have agreed to an advance in wages to fourteen classes of employees, and whether the time has not come when they should begin moving heaven and earth to arouse a militant public sentiment against the further threatened developments which vitally concern not only them but the public.

Attitude of Labor Leaders

The current earnings and ability of the railways to pay obviously afforded no justification for the advance granted to the fourteen classes of non-operating employees. Some of them, but only a part, were entitled to be paid more on the basis of an American standard of living; and it was pointed out that current earnings would not justify the railways in substantially increasing their total pay roll; that it might be impossible for them to recoup themselves by advances in rates; and that, therefore, an advance in basic wages probably would result in a reduction of the number of employees.

The labor leaders replied that the employees they represented were entitled to higher wages, and that it was not their job but that of railway managers to find the means of paying them. The managers had always found ways to meet advances in wages before and undoubtedly would be able to again. The labor leaders indicated nonchalantly that they would rather have a smaller number of employees receiving higher wages than a larger number receiving smaller wages, and that any who were forced off the pay rolls by advances to those remaining on it could go on relief. Refusal of the railways to grant advances would result in appointment by the President of a commission to investigate and report, and the labor leaders expressed confidence that labor had enough influence to make it practically certain that such a commission would recommend even larger advances than the labor leaders would accept as

a result of negotiations. The real motive that caused the Carriers' Conference Committee of Managers to agree to the large advance made was fear that the labor leaders were right regarding this latter matter.

What Would the Public Say?

It may be worth while, however, to speculate about what the public would have said if the controversy had been carried to a commission. The attitude of the labor leaders plainly meant, "The public be damned"—that labor was in the saddle; that it controlled the government; and that if the railroads would not give it enough to satisfy it, whatever might be the cost to the public in higher rates or impaired railway service, labor would get it by exercising its control of government. It does not seem altogether likely that this kind of presentation of labor's case to a Commission with the public of the United States listening in would have been favorably received by the public.

Negotiations with the train service brotherhoods are now being conducted. Their leaders are claiming that their members are entitled to higher wages because of their increased "productivity" and because higher wages are needed to enable them to maintain an "American standard of living." The increase in their so-called "productivity" is due to improvements in machinery and methods of operation toward which employees have contributed little or nothing. Their present wages are much higher than the income of most of the country's workers and producers; and if their wages should be advanced it would be mainly at the expense of persons receiving much smaller incomes and having much lower standards of living than theirs. The controversy with them should be settled either without any advances in wages or only after arbitration hearings or hearings before a President's Commission that would be fully reported to the public.

Furthermore, the true character, purpose and effect of the train limit bill should be adequately presented to the public before the House acts finally upon it.

Of What Use Is Public Sentiment?

The experience of the railways, and especially the experience they are having right now, shows that improvements in service and advertising and other public relations work which help to create a favorable public sentiment may be of no real value unless timely, intelligent and energetic efforts are made to cause that sentiment to become vocal and active in behalf of sound policies when its help is needed. If the American public, after being fully informed regarding what is involved in the proposed railway wage advances and the train limit legislation, should favor them, then it would be plain that railway public relations work is futile, government ownership should be accepted as inevitable and railway security owners should try to sell out to the government at once.

When the recent advances were granted the average railway wage per hour was higher than ever before, while railway gross earnings were 32 per cent less and net operating income was 48 per cent less than in 1929, and one-third of the country's mileage was in bankruptcy. Only a few roads were earning any net income. Many were not earning their fixed charges. A good many were not even earning their operating expenses. This was not due to inefficiency of operation because as a whole the railways never were more efficiently operated. It was due to failure of railway traffic to recover because general business has not recovered, and to the fact that, in spite of continued depression on the railways, their wages and most other unit costs had been advanced to the pre-depression basis. There was and is less justification for and more danger in largely increasing their operating costs now than ever before in their history.

Most of the public does not know these things. We believe that keen public interest in them can be created and that the public can be made to realize where its true interest lies. We believe that strong public opposition to the proposed huge increases in operating costs can be aroused. But this cannot be done excepting by taking the case of the railways to the public in a campaign of advertising, publicity and radio speaking capable of reaching a very large part of the entire people.

Responsibility of Railway Executives

The chief executives of the railways must assume the responsibility if there occur large unwarranted increases in operating expenses due to advances of wages and legislation that probably might, or even possibly might, be prevented by resisting them in every practicable way. Whether in business or public affairs, diplomacy which is not backed by a willingness to fight always plays a losing game. The most skillful retreats may finally be employed so often as to abandon everything worth fighting for. The independent steel companies and the opponents of court "packing" decided to rely upon their own efforts and the backing of an aroused public sentiment; and their reliance proved not misplaced.

Sooner or later the railway industry will either have to fight in the last ditch against policies destructive of its net operating income or find that it has finally lost its ability to maintain itself under private ownership. The labor leaders are now making demands that are wholly unwarranted under existing conditions and pressing them with a reckless disregard of consequences. They care not a whit whether they force many or all railroads into bankruptcy. They prefer that the early result should be government ownership; and they do not give a tinker's damn how much loss they cause to investors in railroad securities or how large a burden of increased costs of transportation they force upon the public. It is time for the railways to fight; and it is time for them to inform the public fully regarding what is involved and spare no effort to enlist public sentiment on their side in the fight.

Unusual Methods Mark P. R. R. Supply Work

Store and shop forces on same payroll—Stocks pooled—Formalities reduced—Accounting simplified

Part I

Columbus, One of the Hubs of Pennsylvania Supply Work

IN replenishing, distributing and accounting for materials and supplies, especially those for maintaining equipment, train and station supplies, the Pennsylvania follows a plan which differs from generally accepted practice in several respects. Most conspicuous is a dual form of organization in which the storekeepers and their forces are on the payrolls and are employees of the departments using the materials, while at the same time they obey instructions of the stores department insofar as the ordering, handling and disbursing of materials is concerned.

A centralized organization under a general storekeeper, reporting to a stores manager, who, in turn, reports to the vice-president in charge of the purchasing, stores and insurance departments, controls the ordering of purchased and manufactured materials, by means of a consolidated stock record, outlines policies, watches standards and exercises general supervision.

Where maintenance of way stores are maintained, the storekeepers in charge are also on the payroll and are employees of the operating or maintenance department, but likewise carry out instructions of the stores department in ordering, handling and disbursing materials. The same general plan also prevails with respect to the handling of scrap and reclamation docks.

Regional Accounting

A distinction is made between maintenance of equipment stocks and maintenance of way stocks wherever the immediate responsibility for them is divided. At present there are 10 separate material accounting districts and 7 accounting offices. So long as the movement of materials is within the material accounting area all of the material is in one pool, regardless of location.

Material accounting has also been liberalized. To as great an extent as possible, and particularly in the case of materials used only in freight car repairs, materials used for one purpose only are handled as working stocks, the consumption of which, for accounting purposes, is determined monthly by inventory differences. Where the work is not sufficient to justify a stores representative, the material details are handled by the local mechanical department representative.

506 Supply Stations

Officers of the principal stores are designated as reporting storekeepers or storekeepers. They requisition purchased and manufactured materials for their respective regions upon system headquarters. All other distributing stores are in charge of stockmen, reporting to the storekeepers in the area. District and division storekeepers are unused titles. There are 506 separate locations where maintenance of equipment materials are stored. These consist of 30 distributing stores, 84 substores and 392 working stock sections. Collectively these stores in 1936 handled a total of 565,000 items of materials having a value of approximately $18,500,000. These stores are in charge of 20 storekeepers and assistant storekeepers and 107 stockmen.

In the New York zone are 4 distributing stores, 2 sub-stores, 24 working stocks and approximately 39,000 items of material valued at approximately $925,000; and these stores are in charge of one reporting storekeeper, one storekeeper and 13 stockmen, located in 9 cities. The Eastern region has 12 distributing stores, 12 substores and 114 working stocks, with 156,600 items of materials and an inventory of approximately $4,000,000. These stores are in charge of 3 storekeepers, 2 assistant

storekeepers and 26 stockmen, located in 10 cities. These are exclusive of the storekeeping organization for the manufacturing and maintenance operations at Altoona, Pa., consisting of 4 distributing and 10 sub-stores with approximately 110,900 items of stock, with an inventory of approximately $6,200,000, in charge of 1 works storekeeper, 1 assistant works storekeeper, 3 storekeepers and 18 stockmen.

The Central region has 6 distributing stores, 31 sub-stores and 154 working stocks, with approximately 175,000 items of material and an inventory of approximately $5,000,000, in charge of 1 reporting storekeeper, 3 assistant storekeepers and 29 stockmen, in 19 cities, exclusive of 1 storekeeper and 1 stockman in charge of a maintenance of way store. The Western region has 4 distributing stores, 29 sub-stores and 100 working stocks, carrying 83,000 items of material with an inventory of approximately $2,600,000, in charge of 1 storekeeper, 1 assistant storekeeper and 16 stockmen, in 11 cities, exclusive of a maintenance of way store in charge of 1 storekeeper and 3 stockmen.

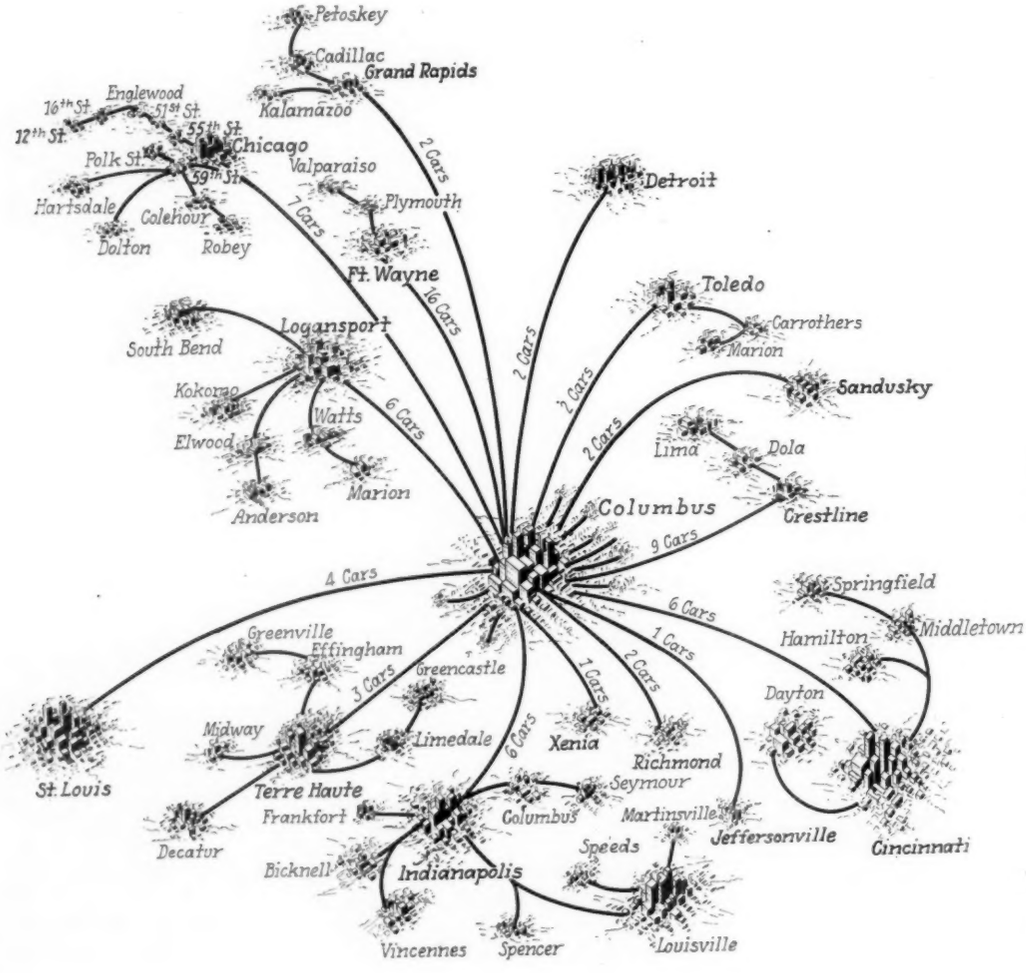
No Order Writing

Noteworthy in this road's supply work is the practice of replenishing and accounting for much of the material for maintenance of equipment. When the outlying stockman for materials for locomotives and cars wants supplies, he does not check his stock in a big book and type out orders in duplicate, triplicate or quadruplicate. Neither does he make out receiving records nor fill out tickets for the accountant. There are few stock books, no prices, few typewriters and few clerks. The chief facilities are a stack of cards, a notice of the next shipment date and a near-by telephone. There is a card for each item of material, and, at stated intervals, the stockman counts his stock, marks the count on the cards, sends them in to headquarters and gets them back in time to check the shipment. The cards are then ready for use again, and, in general, the difference between the counts on the first day of the month and on the last day of the month gives the accountant all he wants to know.

Practically all of the materials in sub-stores and working stocks, amounting to about 30 per cent of the store stock, are replenished through cards; and a reduction in store department forces for maintenance of equipment in the Western region from 835 employees in 1926 to 299 in 1936 is said to have resulted in part from the plan. The same plan is given some of the credit for reducing discrepancies in annual inventories.

Discard Division Accounting

Stock cards were introduced about eight years ago in the territory west of Pittsburgh and were gradually extended until they are now used in all four regions, although with some variations and exceptions. When the Pennsylvania went from the divisional form to the regional plan of operation, many shops previously engaged in making heavy repairs to locomotives and cars were discontinued or reduced to light repair points, and the heavy work was concentrated at one or two points in each region. This made it possible to consolidate materials, to reduce supplies at smaller points to a bare working stock and thus prepared the ground for other



Where Supplies are Kept on the Western Region of the Pennsylvania, and the Average Number of Carloads Shipped to Each Point per Month from the Columbus Store

revisions in supply methods. These revisions were also promoted by replacing divisional accounting by regional accounting, which largely established an inventory of material for each region and dispensed with the necessity of accounting for the movement of materials from one division to another, so long as they did not cross regional boundaries.

The Pennsylvania scheme of distributing supplies locally was further facilitated by the development of a system stores catalogue which established a uniform description of all identical materials on the railroad and gave each item a reference number which could be used in place of writing out the description in preparing requisitions between stores. Supplementing this is a loose-leaf record in each distributing storehouse, in which a record can be kept of all receipts and shipments, as well as the quantity of material on hand and its consumption. The work of the distributing stores in each region is simplified, moreover, by the use of a coupon for requisitioning material on system headquarters without having to write orders for regional requirements; while all stock cards at local stores are furnished already stamped with the same addressograph impression used in printing the system's catalogue.

Western Region Operations

The easiest way to understand Pennsylvania storekeeping is to review operations in the Western region where the scheme is working most completely. This region embraces 4,000 miles of lines, extending from Columbus, Ohio, southwest to Cincinnati, Ohio, and Louisville, Ky., west to St. Louis, Mo., northwest to Chicago, and north to Toledo, Ohio, and points in Michigan, and takes in nine operating divisions—the Columbus, Cincinnati, Indianapolis, St. Louis, Chicago terminal, Fort Wayne, Toledo, Logansport and Grand Rapids divisions.

The main store is at Columbus, from which all materials for locomotives and cars are distributed, with two exceptions. Air brake materials and materials for repairing motor cars and work equipment are handled from Fort Wayne, Ind., and materials for car programs are centered at Terre Haute, Ind. Materials for maintenance of way are distributed from Logansport, Ind., with the exception of a small amount of maintenance material which is carried with the mechanical stocks. Maintenance of equipment stocks for the region total $2,597,000, and the maintenance of way stocks, $2,562,000. Of the maintenance of equipment stock, about $1,054,000 is actually carried at the distributing store at Columbus. The remainder is stored at 132 other locations, 17 of which are sub-stores in charge of stockmen, where material is charged out as called for, and 115 of which are working stocks. Sub-stores and working stocks are segregated by operating divisions to avoid divided responsibility among division authorities over the use and physical handling of the material; but beyond this, divisional lines vanish and the question of whether a store department, enginehouse or car department employee takes care of the stock depends on the amount of work required.

In the immediate environs of Columbus are 18 sub-stores or working stocks which are replenished weekly, or more frequently, by truck deliveries from the Columbus store, while the materials at locations in other cities are delivered by cars consigned to one or more of 16 destinations in charge of stockmen.

Sub-stores and Working Stocks

One or more times a month, for example, a car is shipped to a stockman in Chicago in charge of a sub-store with $32,000 of car stock, a sub-store of $15,000 of enginehouse supplies and working stocks of $900, $50, $7,500, $225, $200, $335, $990 and $200, respectively, at 8 locations. At stated periods, another car is consigned to the same stockman for another sub-store, containing 24,000 of enginehouse material and supplies for small working stocks in his charge at 2 other locations. The same car then is reconsigned by the first stockman to a second stockman stationed at Chicago in charge of a $25,000 stock of train supplies.

One or more times each month, another car is shipped to a stockman at Crestline, Ohio, for a sub-store with $35,000 of enginehouse supplies and a sub-store with $14,000 of car material and 6 working stocks in Crestline and neighboring towns of Lima and Dola. Another car is routed to Fort Wayne, to replenish a $17,000 stock of enginehouse supplies. A second car, with car material, is routed to a sub-store at the Fort Wayne car shop. A third car is consigned to Fort Wayne with material for the air brake shop and working stocks in the neigh-

14 SK55 3½"x6⅝" 300M 5-1-36

THE PENNSYLVANIA RAILROAD
WORKING STOCK COUNT & REPLENISHMENT, & AUTHORIZED STOCK ORDERING CARD

Ea. 42 - 2196 FJ (.28)

NIPPLES, PIPE, steel, 1-1/4" x 6", Standard, Circ.19-E. ORDER

COLUMBUS SHOP

SHIP TO Hawthorne CS AT Indianapolis Ind

REGULAR LOCATION SECTION	A	RESERVE LOCATION SECTION		STOCK MAX.	STOCK MIN.
BIN	A-1	BIN		11	8

1—ON HAND 2—CON'D & ORDERED 3—SHIPPED 4—DATE REC'D

DATE	9-15	9-30	10-15	10-31	11-14	11-30	12-15	12-31
1	8	4	2	5	2	3	7	8
2	0	4	6	3	6	5	4	3
3	0	4	6	3	6	8	4	0
4								

DATE	1-15	1-31	2-14	2-28	3-15	3-31	4-15	4-30
1	5	4	5	2	3	5	8	1
2	3	4	3	6	5	6	3	7
3	3	4	3	6	8	6	0	10
4								

DATE	5-15	5-31	6-15	6-30	7-15	7-31	8-15	8-31
1	7	8	5	3	6	1	6	2
2	4	3	3	5	2	7	2	6
3	4	0	3	5	2	7	2	6
4								

DATE	9-15	9-30	10-15	10-31	11-15	11-30	12-15	12-31
1	5	6	6	8	3	5	1	7
2	3	5	5	3	5	3	7	4
3	6	5	5	0	5	3	10	4
4								

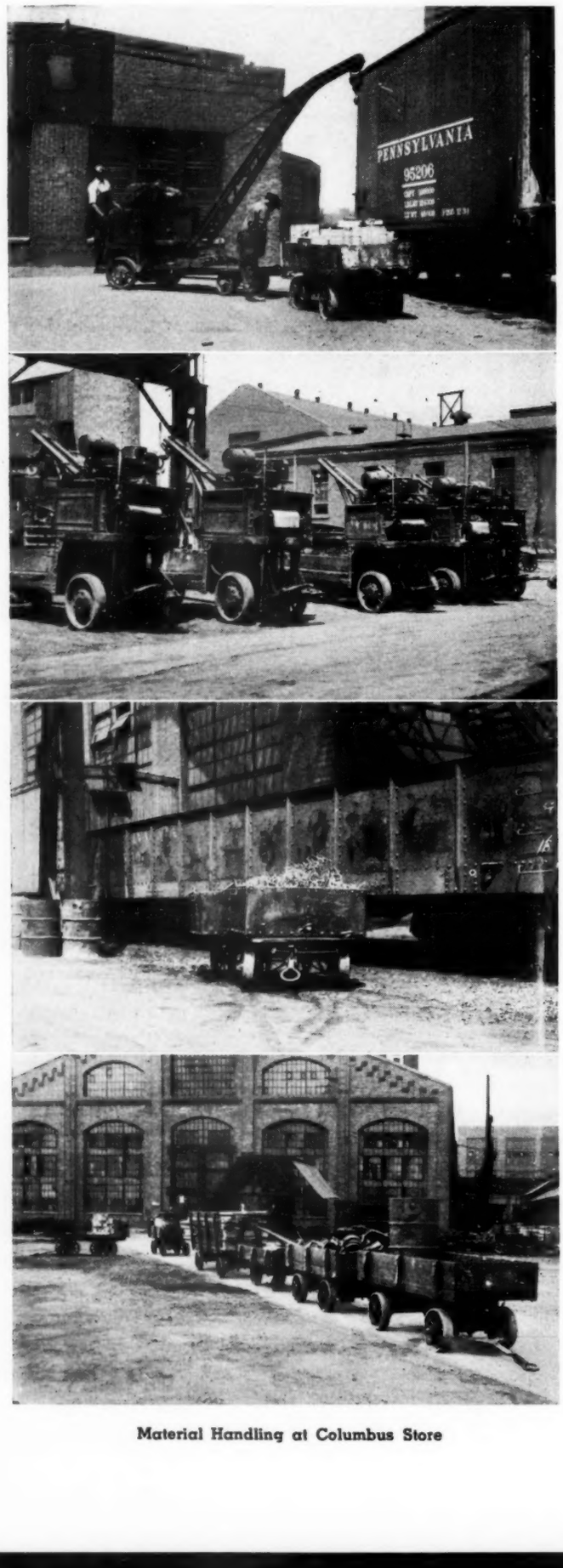
DATE	1-15	1-31	2-14	2-28	3-15	3-31		
1	3	8	5	8	6	2		
2	8	3	6	3	2	6		
3	8	3	6	0	2			
4								

MATERIAL USED ON Freight car repairs

Stock Card Used in Place of Stock Books and Order Form in Pennsylvania Storekeeping—One Card for Each Item—Actual Size

boring towns of Plymouth, Ind., and Valparaiso. The same stockman receives all three shipments.

At stated intervals, another car is routed to Cincinnati, Ohio, where a stockman has charge of a $30,000 car stock and working stocks at 7 other locations. The destination of these and other carload shipments and the number and kind of stores supplied are shown in a chart.



Material Handling at Columbus Store

A Card for Every Item

While some of the stores are within the city limits of Columbus, and others 300 miles distant, and while some stores are sub-stores and others working stocks, cards provide the medium of stock control and replenishment at all locations. Each card measures 3½ in. by 6½ in. and is stamped at the top with an addressograph impression displaying the unit in which the material is reported, the A.A.R. material classification number in which the item falls, the reference number of the item and a description corresponding to the description in the system catalogue. Each card is also stenciled with the name of the store, the subsection, if any, and the number of the bin, and shows the maximum and minimum stocks which the store is authorized to keep on hand. The card also shows the purpose for which the material is to be used and designates the store from which replenishments are to be obtained. The rest of the card is ruled for a consecutive record of the stock actually on hand, the amount used and shipped. When one side is filled, the other side is used in the same manner.

Schedule Shipments

With these cards at each sub-store, the distributing store prepares a schedule each month describing the number of cars which will be shipped from Columbus to each of the 26 destinations during the month. In preparing this schedule, the distributing store is guided by its knowledge of the rate at which each item is used at each point, by loading conditions and by the conditions governing the replenishment of its own stock, bearing in mind that different classes of material are ordered by the Columbus store at different intervals during the month.

The schedule is prepared in the form of a calendar. Storehouses are listed, one below the other, on the left-hand side of the form. Opposite these stations are verticle columns, one for each working day of the month, and the date when a car is to be shipped is indicated by inserting a letter in the proper column opposite the prescribed station. The letters "LA" mean a car of air brake material, "C" is car material, "P" is reclaimed journal box sponging, "S" is non-ferrous scrap, "L" is locomotive material, "T" is couplers, "L*" is a combination car for more than one point and "LB" is exclusively locomotive material. The schedule for February shows that a car of locomotive material was to be shipped from Columbus for the store at 55th street and 12th street, Chicago, on the 5th, and another car on the 18th; while cars of locomotive material were scheduled for Pendleton, Ohio, on the 3rd, on the 12th and on the 23rd of the month. These schedules are mimeographed and copies are furnished at once to all stockmen concerned.

With this shipping schedule, each consignee knows when to check his stock for replenishment. The date for the count is then marked on the stock card, and as the stock is counted, the quantity on hand is marked in pencil on the first line below the date. The quantity consumed since the last count is marked on the next line. The cards are then sorted and those for material which has been used are mailed to the Columbus store. Stockmen usually number all of their cards serially and keep a memorandum of the cards mailed to Columbus, or other distributing stores, as a precautionary measure. Counting the material and marking and sorting the

(*Continued on page 235*)

What Limit to Superheat for Steam Locomotives?

A discussion of the significance of superheat in the exhaust steam showing that the exhaust temperature is not an index to the amount of heat leaving the cylinders

By H. B. Oatley

Vice-President, Superheater Co.

CONSIDERATION of the question which heads this discussion must necessarily include an evaluation of the gains from, as well as the costs of, increasing the degree of superheat in the steam supplied to the cylinders of a steam locomotive with reciprocating engines.

With essentially constant power output, such as is found in marine service and in stationary plants carrying for long periods a steady power load, there has been a noticeable and rapid increase in the use of higher steam temperatures, as well as higher steam pressures. In such service temperatures of the order of 900 deg. F. and occasionally 1,000 deg. F. have been successfully used, and prove that steam and fuel rates per unit of power decrease. Prime movers utilizing this steam have been almost entirely turbines, although reciprocating engines are being successfully operated at pressures as high as 1,800 lb. per sq. in. and with steam temperatures of over 800 deg. F.

Admitting the greater efficiency in the use of steam, it follows that further increase in the temperature of the steam will give increased boiler capacity and make possible an increase in the ton-mile per train-hour output of the locomotive.

Considering, however, reciprocating steam locomotives, we find the question asked "Is more superheat beneficial?" A query which sometimes is made in reply to that question is "What about superheat in the exhaust steam?" A reply to the query should be "Is *temperature* of the exhaust steam a real measure or is it the *heat* (B.t.u.) exhausted?"

The facts can be determined only after the weight and the heat content of the exhaust steam is known.

Thermal Properties of Superheated Steam

The thermal properties of superheated steam have been experimentally established up to pressures and temperatures far exceeding those ordinarily used in locomotives; they can be found in steam tables and heat diagrams which enable one to determine the mechanical work done by a pound of steam of given temperature and pressure when it expands adiabatically (i.e., without external heat interchange) from a given initial to a given end pressure. If true adiabatic heat drop were determined for a steam-chest pressure of 200 lb. per sq. in. (absolute) and an exhaust pressure of 5 lb. per sq. in. (absolute) for various steam temperatures, it would be found that for every 100 deg. rise in steam temperature there is a gain of about 10 per cent in work done by adiabatic expansion. It would further be found that the increase is at a steady rate up to temperatures in excess of those at present used in locomotives.

Raising the temperature of the steam entering the cylinder with a given pressure and cut-off will, if the steam is wet at release, decrease the moisture content. If it is dry at release, the increased initial superheat will increase the temperature. With a decreased weight of steam exhausted, the heat in the steam will be less. To consider solely the temperature of the exhaust steam may lead to erroneous conclusions.

From test plant and road test data it has been conclusively proved that the steam consumption per i.hp.-hr. has been decreased with increased degrees of initial superheat.

In this country today steam at 625 deg. to 650 deg. F. may be considered as representing a fair average in locomotives built during the past 10 to 15 years. Many are operating at 675 deg. F. to 700 deg. F. and a few somewhat higher. Abroad, temperatures of 800 deg. F. and upward are rather common.

Table I—Effect of 100-Deg. Increase in Superheat

Steam pressure (absolute), lb. per sq. in.	200 lb.		350 lb.	
Total steam temperature, deg. F...	650	750	650	750
Superheat, deg. F.	268	368	218	318
Initial heat content, B.t.u. per lb..	1,347	1,400	1,337	1,392
Final heat content, B.t.u. per lb...	1,165	1,197	1,117	1,150
Heat drop, B.t.u. per lb.	182	203	220	242
Steam per i. hp.-hr., lb.	13.98	12.55	11.57	10.52
Heat in exhaust steam, B.t.u. per i. hp.-hr.	16,287	15,022	12,924	12,098

The problem of properly protecting the moving parts, which are in contact with the steam, has been, and still is, a matter of prime importance. When superheaters were first applied to locomotives the question of suitable lubricant, as well as the proper design, material and application of packing rings and bushings became prominent. The solution of these troubles was not difficult when the requirements were fully appreciated. The producers of lubricants met these more severe requirements. The designers and manufacturers of the parts subjected to the pressure and temperature conditions did their part. From the store of experience thus obtained it may safely be said that, so far as lubrication and the life of packing is concerned, there is little reason to doubt the full practicability for locomotive service of superheated steam at temperatures of 850 deg. to 875 deg. F.

In the design and fabrication of superheaters there are no obstacles to the development of superheated steam,

at least up to temperatures of 900 deg. F. It may be found advisable, from the standpoint of life of superheater units, to utilize material of greater heat-resisting properties than have hitherto been universally used both here and abroad. It is reasonable to expect that some increase in material costs would be incurred with the more heat-resistant steels, but it may not be unreasonable to expect that the present-day cost increments will be less with the wider use and increased volume of such material.

Effect of Increased Superheat

The increased cylinder efficiency accompanying higher degree of superheat may be noted from the data given in Table I. The illustrations given are for steam pressures of 200 lb. and 350 lb. per sq. in. (absolute), with an increase of 100 deg. in superheat for each pressure.

The data are based on the adiabatic expansion of steam from the initial pressures given down to 30 lb. absolute (15.3 lb. per. sq. in. gage) at release. The heat content at admission and at release is given for each of the cases and the heat drop of the steam for horsepower-hour is shown. The steam per horsepower-hour shows a decrease with the increased initial superheat. There is also to be noted the decrease that is obtained by an increase in initial pressure. For the steam at an initial temperature of 650 deg. F. the steam per horsepower-hour at 200 lb. pressure is 13.98 lb. and, at 350 lb., is 11.57 lb., a decrease of 17.3 per cent.

The 100-deg. increase in superheat shows, at 200 lb. per sq. in., a 10.3 per cent decrease in the steam per indicated horsepower-hour. At a pressure of 350 lb. per sq. in. the decrease is 9.1 per cent.

The last line in the table gives the heat content in the exhaust steam per indicated horsepower-hour. We have again the supporting evidence for the claim that improved cylinder efficiency accompanies both an increase in steam temperature, which is to say superheat, as well as an increase in initial pressure.

The improved cylinder efficiency means that for a given power output the boiler rating is decreased and, with such a decrease in rating, there is an increase in boiler efficiency. The combination of higher efficiency, both in the cylinder and in the boiler, means a reduction in the fuel consumption.

The development of higher degrees of superheat will, in general, require changes in proportions of the superheater and the proportions of the boiler in which the superheater is located. Such changes as are made must be considered carefully as to the effect on the performance of the locomotive as a whole. Without careful consideration of this fact it would be quite easy to nullify the gains in locomotive efficiency and capacity by establishing unfavorable operating conditions. For example, the gas area through the boiler may very easily be made inadequate and, while the opportunity to produce higher steam temperatures and adequate quantities of steam would exist, the increased resistance to the flow of gases would require a high smokebox vacuum and increased back pressure resulting in a limitation of power output and a reduction in the maximum cylinder horsepower.

It is merely restating a fact well known to all who have had experience in locomotive design to say, as Lawford H. Fry so well phrased it, that the locomotive is today, as it was a century ago, "A linked triangle of fire, water and air" and that the change in some detail, which may appear to be a minor one, can have its beneficial effect nullified by imposing a more unfavorable condition upon some other essential detail.

Modifications in the boiler and its intimately associated parts, which will not only increase capacity, but which will improve locomotive efficiency through the generation and use of higher steam temperatures, as well as steam pressures, have been proved not only in theory, but also in practice.

Zephyr Telephones Prove Their Value

WHEN the Burlington placed its two 10-car Zephyr trains in service between Chicago and Denver, Colo., on November 8, 1936, the equipment included one of the first installations of train-telephones that has been made for the convenience of passengers. These facilities have since been used with gratifying results to both the railroad and passengers for making dining car reservations, handling requests for paging, ordering of food and drinks, and other purposes where the telephone can logically be used to save steps for both passengers and train employees.

The equipment consists of telephones located at three different points in each train: One near the head end of the second car, on the back bar in the cocktail lounge; the second, near the steward's desk in the diner, the fifth car; and the third, in the buffet section of the observation car, the tenth car. Passengers, especially when traveling in groups, are able to ascertain from their seats in the observation car or cocktail lounge when a table is available in the dining car. Likewise, foods from the diner can be served without delay in the cocktail lounge or observation car.

The telephone reduces by about half the number of trips that porters, waiters and attendants make through the train. This not only reduces traffic through the cars, but increases the time that these employees can spend in the cars assigned to their care. Typical of the convenience of the telephone, is its availability in instances where passengers request a particular radio station or

The Telephones Are Used to Save Steps for Both Passengers and Train Employees

record on the train's radio-phonograph system, the controls of which are located in the observation car.

Each location is provided with a wall-mounted telephone of the monophone type, with a two-push-button station for the selection of either of the other locations, and a buzzer to indicate when a call is being received. Only three wires are required between the second and last cars to handle both the talking and signaling circuits.

An interesting feature of the system is the fact that, although the signaling system requires current from the regular 32-volt train line, no batteries or generators are required for the talking circuits. The telephones are of the electro-magnetic type, with Cobolt-metal permanent magnets. Movement of the diaphragm by the voice waves changes the magnetic field established by the permanent magnet, inducing sufficient current in the speaker coil connected across the line to operate the receiving diaphragm of the telephone at the other location without the use of independent voltage sources. The system is a modern modification of the original telephone invented by Alexander Graham Bell. The sensitivity which has been attained may be appreciated when it is realized that sufficient power may be developed by a moderate speaking voice to transmit a conversation 200 miles without independent sources of power.

The two new Twin Zephyrs, placed in service between Chicago, St. Paul, and Minneapolis on December 18, 1936, have the same type of telephone equipment as the Denver Zephyrs. On these trains the telephone instruments are located in the cocktail lounge, in the dining car, and in the corridor between the last two cars. The telephone equipment for both the Denver Zephyrs and the Twin Zephyrs was manufactured by the Automatic Electric Company.

Operating Local Stations*

Problems of proper staff and its morale are important in the small cities and towns

THE small station, with a staff of from 3 to 12 employees, has been the breeding place of a large number of our present executive and supervisory officers. To the ambitious youth, it affords an excellent school for a grounding in railway education, since the work there is less specialized than is the case in most railway departments. Moreover, a larger percentage of the stations on this continent come under this classification, and, while the amount of traffic produced is not exactly commensurate with the numerical plurality of such stations, nevertheless a large proportion of the railway revenues are derived from them, and they bulk large in importance in the railway picture.

The advent of highway competition and the reduction in traffic brought about by depressed business conditions have been felt most keenly at these small stations. They afforded an apparently easy means for reducing expenses, when such reductions were imperative, and they have suffered more, perhaps, than any other department.

It is the purpose of this committee to consider the efficient operation of these small stations, and to stress their importance in the railway picture as a whole. The subject has been considered under various subdivisions.

Unit Measure of Work to Indicate Staff Required

While it is appreciated that no one unit of statistical information can cover completely, and at the same time fairly, stations of all sizes, it is felt, none the less, that

* Abstracted from a report presented before the convention of the American Association of Railroad Superintendents, by a committee of which E. G. O'Brien, assistant general superintendent of transportation, Canadian Pacific, was chairman.

The Small Station Has Been the Proving Ground of Many Executives

it is possible to prepare a current statistical analysis of stations with 3 to 12 employees that will be of value. It is realized, of course, that even in stations of this relatively similar character there can be local conditions which will throw costs out of line by comparison with other stations. Nevertheless a number of railroads have found some sort of yard-stick desirable in providing the superintendent with ready information for the comparison of results that could not be obtained in any other way.

A form that has been in use on a large transcontinental railway for some time has been found to be of great value to the superintendent in supervising station operations. This form has been drawn up in an attempt to reduce all work to an hourly unit basis, so that by counting the units handled and dividing the number of such units by the hours worked per month, the number of employees required for efficient operation of the station in question may be arrived at.

In making use of this form, as well as any other form that might be decided upon, local conditions should, of course, be taken into account in each instance, as there is no formula which will produce the desired result with mathematical accuracy in every case. What the forms do accomplish, however, is to give the superintendent a fairly close estimate of what is transpiring at stations of this nature on his division, and, when considered in conjunction with the local conditions, the supervisory officers have before them as complete a picture of the situation as it is possible to obtain.

Local Station Organization

With the reduction in station forces brought about by decreased traffic, the system of designating station employees as clerks, billers, accountants, checkers, etc., has produced some amazing results that are entirely out of line with efficient operation. For example, at one station where the force has been reduced to four men, each of these men carries a high-sounding title and they are listed on the payroll respectively as agent, foreman, cashier and chief clerk. In other words, they are a Central American army consisting entirely of generals and no common soldiers. This could be avoided if, at these smaller stations, all employees other than the agent were classified under some general title, "clerk" preferred, so that they might be available for any class of work that it was necessary to do. This is also of value when it is necessary to stagger the hours of the staff, as present competitive conditions require.

It is impossible to render equivalent service to that offered by competing forms of transport with the former standard work day of 8 a.m. to 5 p.m. These days the receivers want their goods delivered by 8 a.m., and to do this it is necessary to have the staff on duty several hours earlier to prepare freight bills, unload the cars, etc. The same considerations apply to outbound freight on which the shippers expect the same evening's movement when it is delivered as late as 6 or 7 p.m. The railways must meet other forms of competition by opening their freight houses earlier and keeping them open later, and this operation is materially simplified when all employees are available for whatever duties may be necessary, instead of being rigidly classified as to the type of work which they will perform. This arrangement also facilitates changes due to replacements and holidays.

At this point it should be emphasized that the practice of canceling payroll authority the moment the agent makes a reduction in his staff should be discontinued. The movement of freight almost everywhere is seasonal and the agent should be able to vary his staff to meet changing conditions. It is only natural that an agent will hesitate to cut anyone off the payroll, whether he is needed or not, when he knows that securing the payroll authority to rehire the man when his services are required is a long and cumbersome process. Certain roads have found that it increases efficiency and reduces cost not to cancel the payroll authority when a man is laid off until a period of six months has expired. By following out this system, an agent may cut off a man who will not be needed for three or four months, with the assurance that he can put him back to work immediately when needed, without indulging in a lot of red tape and delay. The system results in the agent having on his staff only such men as are needed to meet the fluctuating traffic demands, and it eliminates the undesirable practice of having an agent carry one or more men on the payroll for months when they are not needed, so as to have them available for the time when they are needed.

Physical Layout at Stations

At many points freight houses have been located to be convenient to the public, close to the business district. The adoption of collection and delivery service has removed the necessity for considering the convenience of the public in this regard: the collection and delivery service has also made large freight houses unnecessary at smaller stations, and it is not necessary to have freight houses in the downtown district.

At a number of points, a considerable portion of the merchandise can be delivered direct from the car, again improving dispatch and reducing train costs. With such an arrangement, the collection and delivery truck operator or local contractor can do most of the physical handling. Experience with such arrangements has demonstrated that it is entirely practicable and has permitted reductions in station staff. It works particularly well where it is possible to arrange for trucks or wagons to unload from one side of a car with the other side spotted at the freight house, and it will reduce costs to the extent that relocation of tracks may be justified. It may be possible to get the same result by covering the ties with planks to permit trucks to get to the cars at the location where they are now normally handled. It has been found possible also to unload merchandise on team tracks by having trucks take to the freight house any packages to be weighed or freight to be held for any reason, such as "billed to order."

Investigation of Service

To bring about the return of merchandise to the rails, a number of roads have developed special investigators who are trained in transportation service but who contact any branch of the service with a view to rectifying any defect in the service so that it will be satisfactory to the public. These investigators are commonly known as "rat-hole" investigators. Where such specialists are not available, superintendents can very effectively have their local situations followed up and eliminate a lot of friction, or can secure traffic by supplying the service which the purchaser of transportation wants.

Too often it is found that shippers and receivers have gone to other forms of transportation because the railway is not giving them a service similar to that available elsewhere. Upon investigation, it will frequently be found that the railway is entirely capable of giving this type of service, but that the needs of the shipper or receiver have not been studied or taken into consideration to determine this, and even a small amount of investigation will go a long way towards uncovering situations of this

kind that could be remedied without too much difficulty and secure the shipper's business.

Railway-road Service to Local Stations

In establishing road service for an area or to a town to which satisfactory train service is not feasible or would be expensive, the delivery should be direct to the shipper instead of through local stations. The present billing and accounting methods make it unnecessary to take the highway truck to the local station for recording, even though the station is in many cases off the main highway and away from the town. This involves considerable delay in the delivery of freight, and also adds to the railway cost.

Billing and accounting can be rearranged to permit both the delivery and pick-up services to operate direct from the door of the shipper or consignee to the zone or railhead center at which it is loaded into box cars.

Such an arrangement would permit of a reduction of costs at the smaller towns and in many cases permit the operation of caretaker stations or closing stations entirely.

Methods of Billing and Suggested Improvements

It is felt that several practices now in effect could be changed with considerable advantage to the railways and to the public. At small stations, the carload or l.c.l. shipment billed to the order of a bank is often delayed on account of the slow movement of the bank draft through several banking centers or due to the freight moving faster than the mail. These delays result in serious difficulties for the consignee and disagreements on account of car demurrage or storage charges. It is suggested that C.O.D. service be provided on both carload and l.c.l. shipments.

The method suggested in previous reports of using stamps on packages has been put into practice by two highway transport companies, including one railway-owned highway operation, and found to work satisfactorily. Such a system can be used for l.c.l. freight where stamps would be put directly on the package and for carloads where they would be affixed to a copy of the shipping bill. It would effect economies to the extent that a reduction could be made in the freight rate on prepaid shipments, the charges for which were covered by stamps.

Agents should have authority for spot settlement of small damage claims, in order to meet a similar arrangement in effect by the highway operators; this in order to reduce the amount of clerical work now necessary on the part of shipper or consignee if he is to get settlement for small damage claims.

Improving the Morale of the Local Staff at Small Towns

At the smaller freight stations, the idea is frequently prevalent that railway service cannot compete with highway service. Agents have lost considerable confidence in the rail organization. Action should be taken to revive interest in the securing of traffic as well as in the matter of service to patrons. As a practical means of creating such interest, it is suggested that a report be made daily or weekly of the traffic handled, with such information as to conditions of the community as may be of interest. The report should show comparative figures of shipments handled by each merchant, prospective business, etc., should indicate what contact the agent has had with shippers or receivers, and should include any personal note as to the changes made or contemplated in the personnel of local establishments, new developments or other items of interest. A report of this nature could be sent jointly to the superintendent and the local traffic representative. The object is to force the agent to contact the users of transport.

Possibly one of the best means of ensuring close contact between the local agent and his shipping public would be the establishment of a buyer's service, similar to that provided by some of the trucking agencies. It is felt that this would return traffic to the rails and would keep the agent closely in touch with his shipping public, particularly if the buyer's service would include an arrangement to purchase goods to be paid for by the buyer's service and shipped C.O.D. to consignees.

Meetings of agents from the division will greatly aid in reviving the interest of the agents at smaller towns and will develop information as to service necessary to secure or hold traffic to the railway.

The service at local stations has been so reduced that it has forced traffic to other channels and this, in turn, has permitted improvement in service offered by competitive transport to the extent that the cumulative effect has been to force the railway out of the picture. Revived interest and improved service will contrariwise secure traffic to make necessary improved rail service and again bring rail transport into the local picture to an extent that is difficult to imagine, if one has not been through the experience.

The railroads should give the service their patrons want. If they cannot arrange it on the rails, the highway should be used, so that the railway agent will be in a position to sell service in which he has a reasonable pride, as the sale of service is the object of railroad operation and the maintenance of local morale is often the difference between profit and loss.

Unusual Methods Mark P.R.R. Supply Work

(*Continued from page 230*)

cards requires but a few hours. Where a sub-store is responsible for working stocks at enginehouses, car repair yards, etc., these working stocks are checked and the minimum stock replenished from the sub-store stock before the check of the sub-store stock is made, so as not to delay placing orders on the distributing stores.

When these cards are received at Columbus, they are immediately distributed to sections where the material is stored. The amount of material withdrawn from stock to fill the order is marked on line three of the card. The cards then move with the material to the car being loaded, where the card is again used to check the material into the car. They are then returned to the office of the distributing store. All cards for each store are then consolidated and returned by mail, with a slip attached to show the number of the car in which the material is shipped. The cards are thus available to check the quantity received at destination, after which they are laid aside for use in counting stock preparatory to the next scheduled shipment.

(*To be concluded in a later issue*)

CONSTRUCTION of a 22.9-mile line of 1.68 meter (approx. 5½ ft.) gage railway is planned in Chile. The line will connect Crucero and Lago Puyehue and funds for its construction, which will be administered under the Department of Public Works, are estimated at 11,243,419 pesos (approx. $449,737).

Russian Railway Data Presented in U. S. Study

OPERATING, construction, and financial statistics of the railways of the Union of Socialist Soviet Republics, covering in general the years 1932 to 1937, respectively, together with a brief history of transportation in the country since the inception of rail transport in 1837, are contained in a bulletin recently issued by the Bureau of Foreign & Domestic Commerce, U. S. Department of Commerce, identified as "W.S.F.R. Supplement No. 40". Synthesizing information from data released by the Soviet government, supplemented by several foreign surveys, the compilation consists of a running commentary divided topically, to which are appended statistical tables which in each case compare the yearly figures of 1932 to 1937. Figures for the latter year, of course, are based entirely on estimates made in the second "five year plan" of the Russian government.

Since 1920, when the 58,549-kilometer (36,299-mile) railway system built by the Czarist government was placed in the hands of the Soviet railway department, the Russian carriers have been operated as a unified national system. Today the entire net work is controlled by the Peoples' Commissariat for Ways of Communication, which in turn has delegated actual line operation to 39 regional bodies called "administrations." Subsidiary properties, such as locomotive and car building plants and rail rolling mills, are controlled by the national commissariat through central departments. Signals and new route construction are also unified in such departments.

Financial analysis of the system is rendered difficult by the complex budgetary appropriation methods common to most of Soviet industry. The fact that the annual appropriations which the commissariat receives from the government are disbursed for both capital expenditures and current operating expenses, the latter of which are compounded with operating revenues in the railway account at the State Bank, makes adequate interpretation of earning power impossible. Official statements assert that any deficit accruing from operation of the lines is minimized through the government appropriations. The need for the latter seems evident in the light of 1935 figures which record total expenditures for the year of 10,574 million rubles and gross revenue from all sources of only 6,830 million rubles. While it is true that over one-third of total expenditures is assigned to capital construction, nevertheless a sharp upward trend in expenses attributable to operation alone has been true in recent years, indicated by a rise from 3,400 million rubles in 1932 to 6,329 million rubles in 1935.

A study of traffic statistics reveals that Soviet railway officers have concentrated their attention on freight movement in recent years. Due to curtailment of passenger train schedules approximating 50 per cent of the total, the 950 million passengers carried in 1935 represents a decrease of over 3 per cent as compared with the volume in 1934. While more recent reports indicate that passenger runs are being restored as freight car loadings reach the figure set by the second five-year plan, it is in the freight field that truly significant traffic volume increases have been made. From 298,000,000 short tons in 1931, freight volume increased steadily, until it reached 558,000,000 short tons in 1936. The estimate for 1937 has been placed at 649,750,000 short tons.

To move this traffic, the Russian railways owned 15,265 locomotives at the end of 1935. Due to the recent construction of heavier motive power and retirement of obsolete types, this figure is considerably below the 18,700 locomotives which were owned at the end of 1933.

At present there are in use 40 types of power, having an average draw-bar pull of about 1600 tons, but, in accordance with a program of simplification, only four distinct types of steam and one of electric locomotives were being constructed at the beginning of 1937 and it is expected that in 1947 the Soviet motive power roster, in general, will comprise two types each of steam and electric freight locomotive units, two classes of steam passenger locomotives, of which one will be for high-speed through service, and one type of electric passenger locomotive. Factories controlled by the commissariat increased standard steam locomotive production from 827 units in 1932 to 1,529 in 1935. In addition there were placed on the lines, in 1935, 38 electric, 4 Diesel, 152 narrow-gage and 109 tank engines and 1,866 motor rail-cars.

At the close of 1936 the system had in operation, or under repair, 637,500 freight cars, as compared with 496,500 in 1932. The average capacity per car increased from 21.5 short tons in 1932 to 23 short tons in 1935. While four-wheeled cars of limited tonnage still make up the greater part of the total number in service, statistics on domestic car-building show that plans for 1936 comprised a total of 32,925 eight-wheeled as against 12,750 four-wheeled cars, indicating the pace at which modernization is proceeding. Passenger carrying equipment totaled 32,900 cars in 1936. No data on cars in service is available for prior years. Construction figures for this class of rolling stock (exclusive of rapid transit equipment) show a rise from 1,112 cars in 1932 to 1,490 in 1934, from which peak they dropped to 889 in 1935 and 750 in 1936—another indication of the emphasis on freight traffic in recent years.

The Soviet railways handle all import shipments from the United States through the Amtorg Trading Corporation, the principal foreign purchasing and selling agent for the Union. In the compilation available, locomotive imports are given only in total tonnage per year and are unclassified as to origin. It is recorded, however, that in 1931, ten freight locomotives were ordered in the United States and, in 1935, one narrow-gage engine.

A large area, vast unsettled lands, the necessity for long hauls between sources of raw material, manufacturing centers, and places of consumption, and general industrialization proceeding at a rapid pace, give Russia a closer similarity to the conditions which shaped the development of American carriers than is the case of any other European nation. As Ralph Budd, president of the Great Northern, pointed out in an article written in 1930 upon his return from an inspection tour of the Russian system (summarized in the *Railway Age*, December 20, 1930), the Soviet lines face the same problems now that early American railway builders and executives met during the period of expansion following the Civil War. Therefore it is most likely that the Russian system will continue to absorb to an increasing extent the proven practices of North American railroading.

FRENCH INDO-CHINA'S first air-conditioned passenger cars are being built in France, according to the Railway Gazette (London). It is reported that the air conditioning equipment for these coaches is being manufactured in the United States. The order comprises 22 sleeping and dining cars for first, second and third class service.

The Viaduct as Seen From the Railroad Right-of-Way

Grade Separation Viaduct Built of Treated Wood

Five-span structure carries North Dakota feeder highway over Chicago, Milwaukee, St. Paul & Pacific track

AN effective use of creosoted wood in a viaduct for a highway-railway grade separation crossing, is illustrated in the five-span structure recently completed to carry a North Dakota feeder highway over the main line of the Chicago, Milwaukee, St. Paul & Pacific a short distance across the state line from Lemmon, S. D. Creosoted wood was used throughout, except for the low concrete piers or sills to support two of the bents, and untreated wood in the hand railings. The bridge was built in accordance with standard plans of the North Dakota State Highway Department, in which a large proportion of the pieces going into structures of this kind are detailed for complete preframing before treatment.

The location is one favoring the construction of an overhead crossing for the highway, as the railroad, the main line to the Pacific Northwest is in a cut about 15 ft. deep. As a result it was possible to obtain an overhead clearance of 23 ft. with approach grades of 5.5 per cent, joined by a vertical curve 490 ft. long, and with only 18,520 cu. yd. of fill in the two approach embankments.

37-Ft. Span Over Track

The main span, 37 ft. center to center of bents, was required to accommodate a possible future second track at 14 ft. centers in addition to the existing track, this span being flanked on each side by an intermediate span of 25 ft. and an end span of 19 ft. 9 in. The main bents, supporting the span over the track, are frame bents resting on concrete piers on natural foundations, while the side bents are of piles, using five piles in the intermediate bents and seven piles in the end bents, to provide support for bulkheads of adequate width to retain the heads of the two approach embankments.

The superstructure is designed to carry a roadway with a gravel wearing surface 24 ft. wide between curb timbers. The gravel, with a thickness of 4 in. at the center line, is carried on a laminated floor of 2-in. by 4-in. pieces placed edgewise, this floor being laid on 10 lines of stringers. Interior stringers are lapped on the caps of intermediate bents, but the exterior stringers have butt joints to simplify the supporting of all the railing posts in the same plane and to improve appearance.

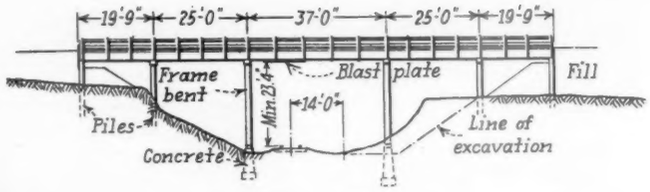
Also, for the sake of appearance, the exterior stringers of all spans have the same depth, namely, the economical depth for the stringers of the middle or longest span. The difference in depth, due to the use of shallower interior stringers in the shorter spans, is made up by introducing filler blocks between the interior stringers and the tops of the caps. For example, in the structure near Lemmon, 28-in. stringers are used in the 37-ft. span and for exterior stringers in the other spans, but inasmuch as the interior stringers of the 25-ft. span are 22 in. deep, they rest on filler blocks 6 in. thick.

Structural Details

The spaces between the stringers over the caps are filled with spacer blocks 4 in. thick, and the entire assembly is held together by two lines of chord bolts or tie rods. Drift bolts, ½ in. in diameter, hold the string-

A View of the Railing

A View From the Roadway



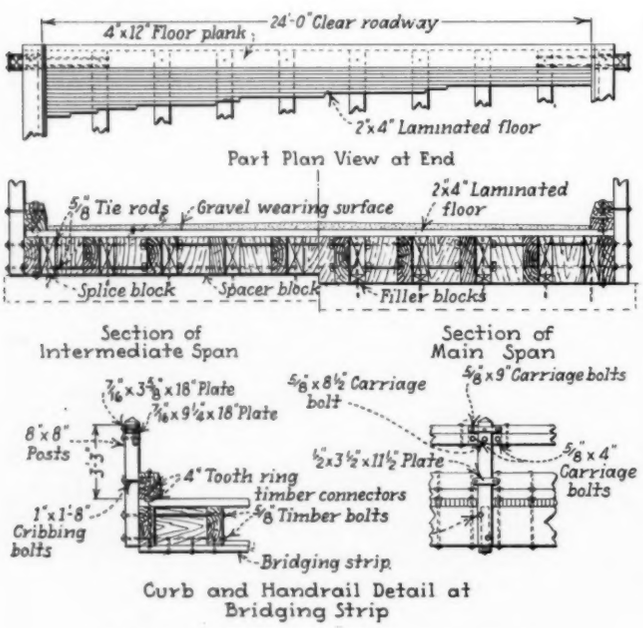
Longitudinal Elevation

ers in place on the caps. The stringers are also stayed at intermediate points (in the line of the railing posts) by means of a 3-in. by 6-in. bridging strip extending crosswise of the span on the underside of the stringers, to which it is fastened by lag screws. In addition, short 3-in. by 6-in. sticks are nailed to the upper side of the bridging strip to serve as struts between the stringers.

One noteworthy feature of the design is the combination of the railing and curbing or wheel guard. The latter is of two-ply construction with an 8-in. by 12-in. piece on top and a 6-in. by 12-in. piece on the bottom. The upper timber is continuous, but the lower one is made of short pieces so that a drain opening 12 in. wide could be introduced halfway between the railing posts. These curb timbers are secured in place by bolts that extend through the laminated floor and the exterior stringers, with tooth-ring connectors between the upper and lower curb members and between the latter and the floor. One of the drawings shows how the railing posts are bolted to the curb and to the stringers.

Flush Inside Face

In order that the railing will present a smooth face on the inside, in conformity with current highway practice, the rail members are cut to fit between the posts, with the inside face flush with the face of the posts. They are spliced across the posts, both outside and inside, by steel plates $\frac{7}{16}$ in. thick. The inside faces of the posts and rails are gained so that the plates can be set flush. Carriage bolts are used for these splices, with the heads on the inside, in order to present the least possible obstruction to vehicles that might come in contact with the railing, the inside splice plates having square holes to receive the shanks of these bolt heads.



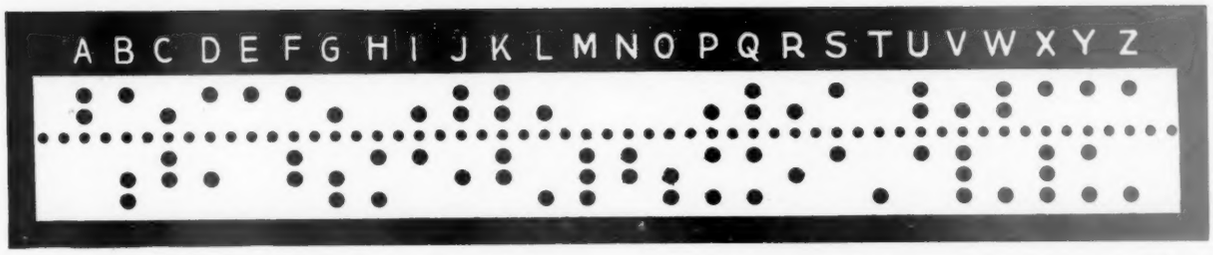
Details of the Deck and Railing Construction

The wood in this viaduct was purchased to conform with the specifications of the West Coast Lumbermen's Association for select structural material of the various classes used. It was treated with Grade I creosote oil in accordance with the specifications of the American Wood-Preservers' Association. Incising was required on the wide faces of all pieces 3 in. or more in thickness and 4 in. or more in width and on all faces of timbers 4 in. or more in both dimensions. This structure was designed for the H-15 truck loading of the American Association of State Highway Officials, occupying lanes 10 ft. wide, with provision for a 50 per cent increase in total live load in both lanes or a 100 per cent increase in any one lane, with not more than a 33⅓ per cent increase in allowable unit stresses.

The materials used included 94,194 ft. b.m. of treated wood, 2,274 ft. b.m. of untreated wood, 840 lin. ft. of creosoted piling, 32.8 cu. yd. of concrete, and 4,977 lb. of reinforcing steel, structural steel and hardware. This project was carried out under the direction of the North Dakota State Highway Department, of which H. C. Frahm is chief engineer and Clifford Johnson is bridge engineer. The work was financed by federal grade crossing elimination funds under the Emergency Relief Appropriation Act of 1935.

* * *

A Union Pacific Freight Under the Chutes at Pine Bluffs, Wyo.



A Specimen of Teletype Tape is Shown, with the Letters of the Alphabet Indicated Above the Perforations Which Transmit That Particular Character

Teletype Service on Mo. P.

New system gives maximum utilization of trunk line wires—Handle both messages and wheel report-consists

By W. Rogers

Superintendent Telegraph, Missouri Pacific

THE Missouri Pacific has made installations of teletypes at Little Rock and North Little Rock, Ark., and at Texarkana, Tex., for use in handling messages and wheel report-consists between these points and St. Louis, Mo. The purpose of these installations, and of others contemplated, is two-fold: First, to get trains through terminals more promptly; and second, to furnish, more promptly, complete information to the service and diversion bureaus, enabling them to handle diversion orders more efficiently and to furnish information about shipments to patrons. As this system of handling wheel report-consists differs in some ways from previous installations made on the Missouri Pacific, such as the one between St. Louis, Mo., and Kansas City, brief descriptions of the two systems are given below:

In the older system, a two-way teletype circuit is assigned to the yard offices involved, ready for service at any moment. While that system has operated satisfactorily for several years and was the best available at the time it was installed, it has two inherent limitations: (1) A wire (for example, St. Louis to Kansas City) must be assigned exclusively to it, and, during part of the time, this circuit is idle, resulting in a rather wasteful use of facilities; and (2) any wire trouble, even of

DIVS. REPORT OF CARS HANDLED — SOUTH BOUND — ARKANSAS — Sheet No. ONE

TRAIN (A)	ENG. (B)	CONDUCTOR (C)	ENGINEER (D)	FROM (F)	DATE (G)	TIME (H)	LOC. (I)	NTYS. (K)	ARR'D AT	TIME	MILES
LJ-67	1551	HAWKINS		NORTH LITTLE ROCK	4-21	4:37					

INITIAL SYMBOL (M)	NUMBER TIME OF ARRIVAL (N)	KIND OF CAR CONTENTS (O)	DATE	STATION NO. TAKEN FROM LEFT AT (S)	MILES Loaded Empty	TONS RET. (S)	TONS GRO.	POINT OF ORIGIN CONSIGNEE (U)	DESTINATION JUNCTION AND ROUTING (V)	
SLRN	2998	B	21	X344			20	NTHLROCK	TEXARKANA	1
DA3278	630A21	BRICK						EXPORT	TP I&GN	
MP	77786	A	21	X344		32	56	SAME	ROUND ROCK TEX	2
DA6280	630A21	AUTOS						HENNA MOTOR CO	T&P	
MP	77363	A	21	X344		10	35	SAME	LAREDO TEX	3
DA3281	630A21	AUTOS						EXPORT	T&P I&GN	
MP	77604	A	21	X344		10	35	SAME	GALVESTON TEX	4
DA3282	630A21	AUTOS						DOW CO	TP I&GN	
ATSF	227164	B	21	X344		5	30	DUPO ILL	SANANTONIO TEX	17
DA3295	630A21	MDSE						AGENT	SAME	
WAB	80619	B	21	X344		5	30	SAME	PALESTINE TEX	18
DA3296	630A21	MDSE						SAME	SAME	
RI	134074	B	21	X344		51	76	GUION	LAREDO TEX	19
BN3504	630A21	SAND						EXPORT	SAME	
CBQ	133035	B	21	X344		39	58	SAME	SAME	20
BN3505	630A21	SAND						EXPORT	SAME	
LN	7996	B	21	X344		50	74	CADET MO	TUCKER TEX	21
BK846	630A21	BARYTES						TIDEWATER SEARD CO	SAME	
										22

Instructions: Use two (2) lines for each car. Write (from way-bill) on top line information called for in first line of heading; on bottom line that called for in second line of heading, except under "From" use top line only for this and on bottom line under this heading, show relay or ventilation letters, such as CPD-EPE, etc.

The W. B. Gilley Printing Co.

Left—Wheel Report—Consist as Transmitted on Teletype Machines. Below—Partial View of the St. Louis Telegraph Office, Showing Battery of High-Speed Teletype Machines

short duration, which occurs during the time a train is being "wheeled," causes errors in the copy being received at the advance terminal. These errors must be corrected by a second transmission of the report, because the copy for the conductor cannot be held up until the wire trouble has been remedied. The transmission in the old system is effected by "direct keyboard transmission," that is, the man preparing the report uses his teletype machine as a typewriter, and each time he strikes a key to print a letter or figure on his "home copy" that action transmits directly the necessary electrical impulses over the wire to operate the receiving teletype at the distant terminal.

Features of New System

In the new system of handling consists, which was originated and developed on this railroad, the transmission over the wire is not direct from the keyboard, but is handled automatically by means of a perforated tape prepared automatically by the operation of the direct-keybord teletype on which the original wheel report-consist is typed. This tape can be transmitted at any convenient time on teletype circuits to one, two or more points. In case the wire is interrupted, the tape can be held until the trouble has been remedied and then transmitted without any additional labor on the part of the yard forces. It can be transmitted on two or more circuits without additional labor.

In the large telegraph offices, messages are prepared for transmission by perforating a tape on a device known as a perforator. This device has a keyboard similar to a typewriter and exactly like the keyboard on the teletype used in yard offices, but, instead of "sending" the electrical impulses direct over the wire, it merely punches holes in the tape. The tape thus prepared is then run through an automatic transmitter to accomplish the actual transmission.

The installation at North Little Rock yard office consists of three direct keyboard teletypes, similar to but of newer and better design than those used at Topping avenue, Kansas City, and 23rd street, St. Louis. Each of these new teletypes is connected by a wire of its own to a "reperforator" in the Little Rock relay office. The function of the "reperforator" is to prepare the transmitting tape referred to above. The yard clerk at North Little Rock merely uses his teletype machine as a typewriter to prepare the wheel report-consist and, as a result of that operation, the transmission tape is prepared in the relay office.

Speed of Tape Transmission

In the Little Rock relay office there is a high-speed teletype circuit to St. Louis, equipped with an automatic transmitter. A similar circuit operates to Texarkana.

Assume, for example, that North Little Rock yard office is "wheeling" train 73. As the operator types the wheel report, the reperforator in the Little Rock relay office perforates a strip of tape. When a sheet has been completed, an attendant takes the tape from the reperforator, and inserts it in the transmitter of the St. Louis teletype circuit. The tape is automatically fed through the transmitter, sending out the same electrical impulses as would have been sent if the keyboard teletype operated by the yard clerk had been connected directly to the wire. The speed of transmission is much faster than direct keyboard transmission. About 7 or 8 minutes is required to transmit one full sheet of wheel-report consist by tape, as against an average of about 25 minutes by direct keyboard. At the same time the tape is transmitting to St. Louis, it also transmits to Texarkana. This is accomplished by a repeating device which temporarily connects the two circuits. If one circuit is busy and cannot be connected at the moment, the tape is "rerun" on it as soon as it is available. The receiving machines are equipped with copying ribbons and as many copies as are needed may be made at the receiving station.

Above—A General View of the Telegraph Office at St. Louis. Right—Teletype Sending Receiving Page Printer

Typical Use of the System

Assume, for another example, that Texarkana is wheeling the train familiarly known as the "Lettuce Block," which is the section of train No. 60 carrying perishables from Southern California and Arizona. The yard clerk prepares the wheel report as described above. A copy is printed and a tape automatically perforated at the Little Rock relay office. The printed copy is delivered locally, and the tape is run to North Little Rock and St. Louis simultaneously. Assuming that the train was "wheeled" at Texarkana in the order the cars stand in the train, North Little Rock has complete information for switching, diverting cars, setting out or filling, and can prepare its wheel report for movement north before the train arrives. This minimizes the handling of waybills at North Little Rock and eliminates any delay on that account.

Following the "Lettuce Block" through, when North Little Rock prepares its wheel report, the tape prepared automatically by the reperforator in the Little Rock relay office is transmitted to St. Louis, at which point another reperforator is cut in to prepare a tape to be run to Dupo on the St. Louis-Dupo teletype and, if the make-up of the train has not been disturbed, Dupo has a complete picture of the train long in advance of its arrival. If the train was filled out, or any cars were set out enroute, it is expected that this information will be conveyed to Dupo by telegraph or telephone.

Installation at Texarkana

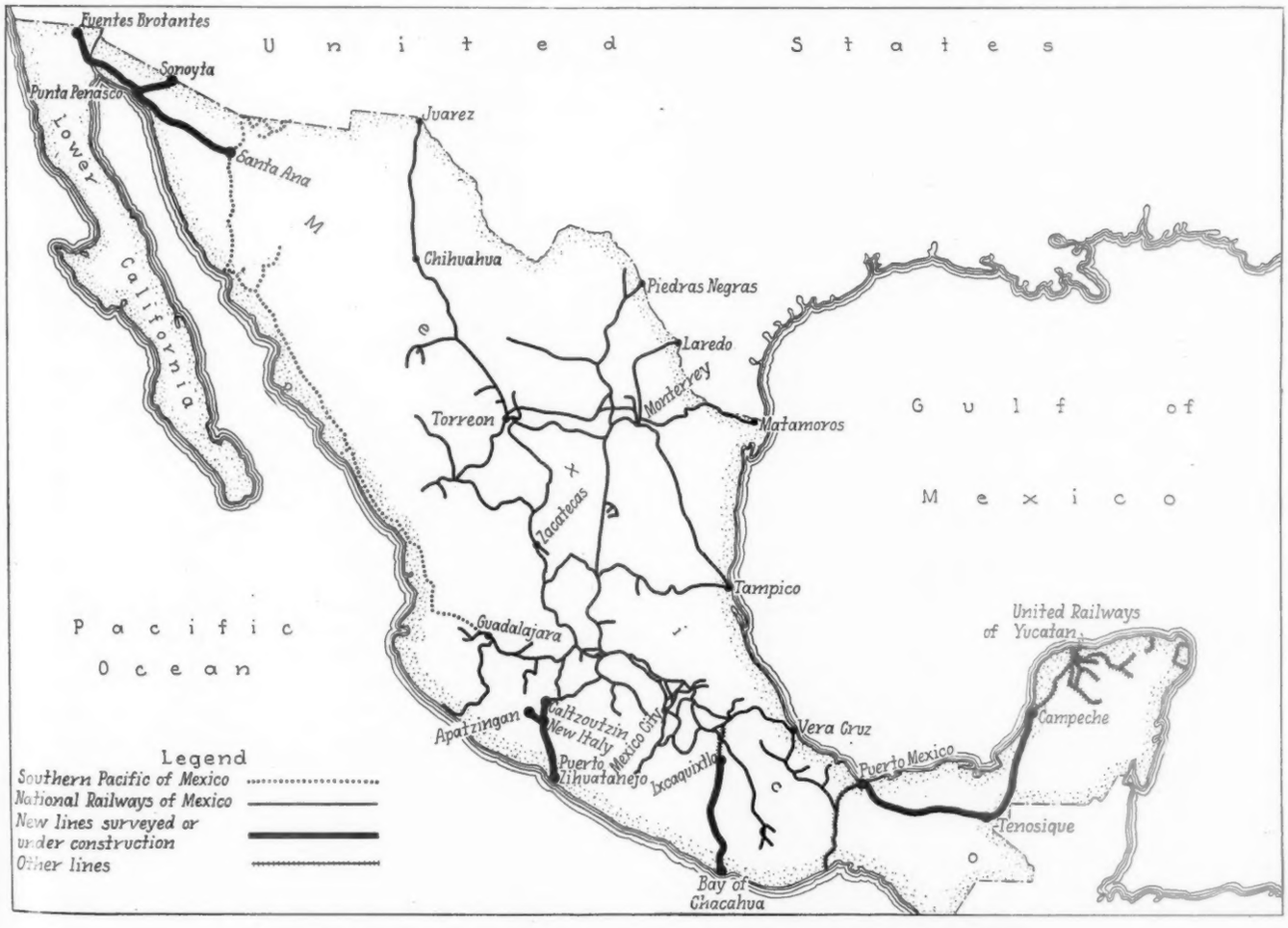
The installation at Texarkana consists of three keyboard teletypes (one spare) directly connected by a duplexed wire to the Little Rock relay office. The duplexed wire provides a simultaneous sending and receiving channel. No additional equipment was installed at St. Louis, use being made of an existing high-speed teletype circuit.

All wheel report-consists from Little Rock and Texarkana are transmitted to St. Louis and delivered promptly to the service bureau and the diversion bureau. The new system makes possible maximum utilization of trunk line wires, since they can be used both for messages and wheel report-consists. One high-speed teletype circuit between St. Louis and Little Rock carries all the consists originating at Dupo, North Little Rock and Texarkana, and, in addition, carries all messages between those points. The older system would have required at least five teletype circuits between St. Louis and Little Rock.

New Lines in Mexico Total 1000 Miles

WITH five major projects being carried forward simultaneously, work on the construction of new lines in Mexico has again become active. These new lines, which are being built to provide much-needed connections between existing lines or between the termini of existing lines and coastal points, are being constructed by the Secretariat of Communications and Public Works through the department of Railroads, Traffic and Tariffs. Completion of the five projects will involve the construction of a total of about 1,000 miles of new lines, at a cost of approximately $42,000,000. As of April 15 about 900 miles of the total projected mileage had been surveyed and construction work on all of the lines was under way.

By far the largest of the projects is that known as the Southeastern line which is being constructed to provide a connection between the government railways in the state of Yucatan with those of the remainder of the country. Starting at Puerto Mexico, Vera Cruz, where it connects with the Tehuantepec Railway, this line, of standard-gage construction, will extend easterly and somewhat southerly, touching points in the states of Vera Cruz, Tabasco and Chiapas, to Tenosique, Campeche, thence turning northeasterly and extending across the state of Campeche to the city of Campeche, where it will join with the United Railways of Yucatan. This line will be approximately 475 miles long and will cost about $23,000,000. At this time a total of 87 miles



Map Showing the Location of the New Lines in Relation to Existing Lines in Mexico

of this line has been graded, 35 miles of rail have been laid and all but 25 miles has been surveyed.

Another important line on which work is now being prosecuted is one which, when completed, will furnish an outlet to the Pacific Coast for the interior state of Puebla and the surrounding country. Starting at Ixcaquixtla, Pue., which is the terminus of the Huajuapam branch of the Mexican Railway, this line will extend almost directly south across the state of Oaxaca to the Bay of Chacahua. This line, which is being built to narrow gage, will be 192 miles long and will cost approximately $4,200,000. On this line 51 miles of grading have been completed, 30 miles of track have been laid, 23 miles of telegraph line have been completed and 74 miles have been surveyed.

A New Line to the Pacific Coast

A third line, which in reality involves two separate projects, will extend from Caltzoutzin, Michoacan, on the National of Mexico, southeasterly to Puerto Zihuatanejo, Guerrero, on the Pacific Coast. From a point on this line in Michoacan known as "New Italy," a branch line 17 miles long will be constructed westerly to Apatzingan, Mich. These lines will be of standard-gage construction. That portion extending from Caltzontzin to New Italy and thence to Apatzingan, which is being built first, will be 78 miles long and will cost about $5,000,000. On this portion of the project the entire mileage has been surveyed, grading is in progress on 80 per cent of the line, 28 miles of track have been laid, and 50 miles of telegraph line have been built. On that portion of the line between New Italy and Puerto Zihuatanejo, about 106 miles have been surveyed.

The fourth major project, which has its location in the extreme northern part of the country, is being carried out to provide on all-Mexican rail connection between Southern California and the remainder of the country. With its western terminus at Fuentes Brotantes, Sonora, where it connects with the Southern Intercalifornia Railroad, this line passes through Punta Penasco, Son., a port in the Gulf of California and has its eastern terminus at Santa Ana, Son., a point on the Southern Pacific of Mexico. The present construction activities on this project are confined to that portion of this line west of Punta Penasco, which is about 100 miles long and will cost about $1,700,000. It is planned later to undertake the construction of a branch line from Punta Penasco northwesterly to Sonoyta, Son., 59 miles, which is near the Arizona border. This line will cost about $1,100,000.

Report on Status of Express Agency

WASHINGTON, D. C.

THE Railway Express Agency would remain subject to Part I of the Interstate Commerce Act with respect to the bulk of its operations while some of its activities in the motor vehicle field would be under Part II (the Motor Carrier Act) if the Interstate Commerce Commission should adopt findings recommended by Examiner C. I. Kephart in his proposed report on the R. E. A. application for a determination of its status. The proposed report was served on August 12 and recommends that the findings be adopted but that no order is necessary, "since appropriate orders will be issued in conjunction with the applications for certificates or permits covering specific operations."

The examiner's recommended findings are summarized in the report as follows:

(1) That in the performance of common motor carrier collection and delivery of express traffic in interstate or foreign commerce forwarded by railroad or partly by railroad and partly by water applicant is subject to part I of the Interstate Commerce Act;

(2) That finding (1) is similarly applicable in instances where applicant performs the same character of service through a contract carrier by motor vehicle as defined in section 203 (a) (15) of part II of that act;

(3) That in instances where such service is performed by independent common motor carriers, the arrangement for continuous carriage is merely one between two common carriers under joint, combination, or other forms of through rates;

(4) That in the performance of road-haul common motor carrier express service, i.e., beyond the established collection and delivery limits of municipalities, applicant is subject to part II;

(5) That, in the absence of general jurisdiction in this commission over air lines, common motor carrier transfer by applicant between railroad and air-line termini of through express matter in interstate or foreign commerce should be deemed to be embraced by finding (1) above;

(6) That, in the absence of such jurisdiction in this commission over air lines, common motor carrier collection and delivery of similar express matter for transportation by air or partly by air and partly by railroad made by applicant in municipal areas and zones commercially parts thereof are subject to part II, whether performed by applicant's own trucks or for it by trucks of others "by a lease or any other arrangement," in which the contract carrier may also be subject to part II;

(7) That finding (6) is similarly applicable in instances where applicant performs the same character of service in connection with through interstate or foreign traffic by steamship lines not subject to this commission's jurisdiction;

(8) That in the performance of road-haul common motor carriage of interstate or foreign express traffic in lieu of diminished or abandoned railroad service or in new territory where rail service never existed applicant is subject to part II; and

(9) That in the performance in interstate or foreign commerce of contract motor carriage for railroads, whether in road-haul, transfer of traffic between stations at municipalities, or collection and delivery of freight or passengers' baggage, applicant is subject to part II by virtue of the definition of a contract carrier in section 203 (a) (15) thereof.

The report after preliminary discussions of the application and of regulation applied to express companies prior to the passage of the Motor Carrier Act touches briefly upon the Express Agency's tie-up with the railroads. Because of the latter, and because of the Agency's ready organization and equipment, the examiner says, "expediency has inclined many of the railroads to an increasing utilization" of R. E. A. facilities for the contract carriage of traffic other than express. As of June 30, 1936, the aggregate express mileage operated by R. E. A. under agreements with various classes of carriers was 265,633.25; motor carriers comprised 8,722.31 miles of this total. The Agency operates about 9,200 motor vehicles, exclusive of those operated by others with whom it has "some sort of operating or interchange arrangement."

In filing the application to preserve whatever rights it might possess under the Motor Carrier Act's "grandfather clause" the R. E. A. at the same time took the position that all of its motor vehicle operations in interstate or foreign commerce "are wholly subject to Part I of the Interstate Commerce Act and no part of them to Part II, because it is an agency of the railroads and because the service performed is for the railroads in the movement of traffic subject wholly to Part I."

The examiner discusses this contention and proceeds to consider various types of Express Agency operations, giving specific examples of each, as he develops his argument in support of the recommended findings set forth in the foregoing.

Communications and Books . . .

The Railway Age cannot publish letters from readers who do not supply their names and addresses. Names of correspondents are not published, or disclosed even upon inquiry, unless the correspondent consents. But they must be given us as an evidence of good faith.

Suggests Advance Warning Signal at Grade Crossings

BLOOMFIELD, N. J.

TO THE EDITOR:

The Federal Aid program for elimination of many grade crossings, and signal protection at many more, is undoubtedly producing fine results.

Reports continue to appear, however, showing a substantial number of the accidents at crossings are due to autoists running into the sides of trains. Higher car speeds; slippery roads due to rain, ice, snow or sleet; weather conditions such as fog, heavy rain, etc.; and curves in roads close to crossings are the basic causes of accidents of this kind. This would seem to indicate that insufficient warning is given for proper control of cars approaching grade crossings.

The standard indication of alternate flashing lights is unquestionably the best obtainable signal at the crossing. If this signal were supplemented by a continuously flashed yellow signal located several hundred feet from the crossing, it would undoubtedly prevent a large number of these "running-into-the-side-of-train" accidents.

Installation of this advance signal would likely be approved on Federal programs. Its maintenance, because of its location off the railroad right-of-way, would be handled by the state highway departments.

Yellow, or caution, signals have been adopted as necessary for safety in train operation. Its extension to cover the more generally recognized hazard at grade crossings should pay its dividends in additional safety.

W. J. SAVAGE.

Types of Crossing Signals Installed

ST. LOUIS, MO.

TO THE EDITOR:

During the annual convention of the Signal Section, A.A.R., in March, as reported on page 511 of the *Railway Age* of March 20, C. A. Dunham, superintendent of signals of the Great Northern, made the following statement:

"Approximately 40 per cent of the crossing signals installed throughout the country in 1936 were of the rotating disk type."

In the January 2, 1937, issue of the *Railway Age* the following statement is found:

"The year 1936 saw an increase in the divergency of opinion in the various states as to the type of protection required. Flashing-light signals, the standard recommended by the Signal Section, A.A.R., were installed most extensively, totaling 1,560 signals. The use of the "Stop" or "Stop on Red Signal" sign, as a part of the flashing-light signal, as recommended by the Signal Section, has now been adopted almost universally, only 66 of the 1,560 flashing-light signals installed last year not being equipped with such signs. The wigwag signal, also one of the standards of the A.A.R., made a strong comeback, totaling 281 signals. The rotating-disk stop signal, which is not an A.A.R. standard but which is supplemented by standard flashing lights, is used extensively in Wisconsin, Minnesota and several of the other states, where a total of 315 of these signals were installed. During the year 1936, a total of 32 stop-and-go traffic type signals were installed for the protection of railroad crossings. At some locations where the use of signals alone is not considered adequate, obstructions in the form of automatically-controlled gates or barriers were installed, a total of 33 gates and 6 barriers being placed in service during the year."

From this information I have listed the number of signals of each type and the percentage of the total as follows:

Type of Highway-Grade Crossing Signals Installed in 1936
Railway Age, January 2, 1937

Type of Signal	Number	Per cent of total
Flashing-light signals	1,560	70.1
Wigwag signals	281	12.6
Rotating-disk stop signals	315	14.1
Stop-and-Go traffic signals	32	1.4
Gates	33	1.5
Barriers	6	0.3
Total	2,227	100.0

It will be noted that the rotating-disk stop signals account for about 14 per cent of the total, whereas flashing-light signals account for 70 per cent of the total.

I have delayed writing this letter in an effort to check the statement first referred to, but have been unable to find any figures which would support the 40 per cent figure. Inasmuch as the *Railway Age* statement was made up from data collected from all of the railroads, I believe it should be accepted as substantially correct.

P. M. GAULT,
Signal Engineer, Missouri Pacific.

Proceedings of the American Railway Engineering Association for 1937, 742 pages. 6 in. by 9 in. Bound in cloth or half Morocco. Published by the association 59 East Van Buren street, Chicago. Price, cloth $8, half Morocco $9.

The annual proceedings of the American Railway Engineering Association need no introduction to the readers of *Railway Age*, who are well aware of the objectives of this organization and the nature of the volume in which the results of its work is recorded. The number of pages this year is less by 342 than the number in the proceedings for 1936, but nearly two thirds of the difference is accounted for by a monograph of more than 200 pages included in last year's volume. As the proceedings embrace the reports of some 27 committees covering substantially every conceivable subject relating to the "scientific and economic location, construction and maintenance of railways", and the discussion of these reports at the convention in March, it is impossible to single out individual subjects covered as worthy of mention, to the exclusion of others. Excluding routine assignments, such as "Revision of the Manual," the table of contents lists 110 subjects that were reported on by the committees. However, a further measure of the scope of this association's activities is afforded by an "Outline of Complete Field of Work," that was submitted by most of the committees as a part of their 1937 reports.

Universal Directory of Railway Officials and Railway Year Book, 1937-1938. Compiled from official sources under the direction of the editor of the Railway Gazette (London). 604 pages, 8½ in. by 5½ in. Bound in cloth. Published by the Directory Publishing Company, Ltd., 33 Tothill street, Westminster, London, S.W. 1, England. Price 20 shillings.

With this volume, the Universal Directory reaches its forty-third edition and its fifth issue since absorption of the Railway Year Book. No change has been made from previous editions in format or scope, but all of the tables and lists have been revised to date of publication. The usual directories of officers and brief descriptive information (such as gage and mileage) concerning over 1,900 of the chief railway systems of the world have also been brought up to date. Developments since the previous edition have necessitated complete revision of the tabulations on main line electrification and statistics on total world railway mileage. Information concerning the British roads,

which takes up the greater part of the general statistical section of the book, has been expanded to include notes on railway air services and highway transport affiliates. As might be expected, the customary discussion of speed records has undergone a complete revision, in the light of recent high-speed performances.

Bridges in History and Legend, by Wilbur J. Watson and Sara Ruth Watson. 248 pages, 7½ in. by 10¾ in. Bound in cloth. Published by J. H. Jansen, Caxton Building, Cleveland, Ohio. Price, $3.50.

This book can not be characterized as a history of bridges; rather it deals with the legendary and romantic in bridges and bridge building the world over, from the dawn of history to the present. To point out that it contains many poems, excerpts from poems and verses dealing with bridges, gives perhaps the best idea of its nature. Nevertheless, the subject matter is presented in somewhat of a chronological order, dealing first with the purely legendary and following in later pages with accounts that have an historic basis. Thus the early chapter headings include Rainbow Bridges, Devils' Bridges, Saints' Bridges, War Bridges, Bridge Pageants and Old London Bridge. Later chapters embrace Bridge Builders, which deals briefly with the work of leading bridge engineers and builders of history, and the Span of a Century, which describes a number of the world's great structures. To many the book will have its greatest charm in the large number of attractive reproductions of pen and ink sketches by Emily Maria Watson.

Our Transportation, by Josephine Worthington and Catherine Matthews Frank. 256 pages. 5 in. by 7¼ in. Bound in cloth. Published by the F. A. Owen Publishing Company, Dansville, N. Y. Price, $.96.

Designed to acquaint school students of intermediate grades with the basic features of the American transportation systems, this text-book presents a simplified survey of those developments in air, water, rail and road transport most likely to arouse the interest of youthful minds. The portion dealing with railroad development is divided into short sections comprising: 1—a general description of passenger travel as might be experienced by the students themselves; 2—a short history of major inventions and improvements, with stress on early locomotives; 3—brief surveys of domestic and foreign practices; 4—recent developments; 5—railways of special kinds—street, rapid transit, cable, mountain, etc.

In a work of such scope, of course, no attempt is made to present a complete picture. It is, rather, an attempt to pick out unrelated features that should stir a child's imagination. To serve this purpose, the work includes many interesting reprints and halftones.

The Model Railroader Cyclopedia. 79 pages and 19 plates. 10 in. by 7 in. Bound in paper, $1.50; cloth, $2.00. Published by The Modelmaker Corp., Wauwatosa, Wis.

Handbook For Model Railroaders, by W. K. Walthers. 9 in. by 6 in. Bound in cloth. Published by The Modelmaker Corp., Wauwatosa, Wis. Price $2.00.

These two works fulfill a need long felt by the operating and engineering "officials" of the diminutive rail systems that are springing up through the land—in cellars and attics. The cyclopedia, which assumes that model railroaders want to base their products on actual standard prototypes, contains plans drawn with the full measurements of carefully selected rolling stock, complete to the last bolt. And in order to aid in the creation of "atmosphere," there are included complete plans and photographs of interlocking towers, way stations, section sheds, bridges, etc.

The handbook is the more general of the two and might be said to comprise an excellent survey of the model railroading hobby. It will give the outsider an insight into the field and help the beginner to formulate his general plans, analyzing, as it does, the lengths to which the model builder can go with various degrees and kinds of facilities and "capitalization."

A Decade of Bridges, by Wilbur J. Watson, consulting engineer, Cleveland, Ohio. 126 pages, 8½ in. by 11¾ in. Bound in cloth. Published by J. H. Jansen, Caxton building, Cleveland, Ohio. Price, $4.50.

This book is essentially a supplement to "Bridge Architecture," by the same author, published in 1927, but is complete in itself in that it illustrates and describes the notable structures built in America and Europe between 1926 and 1936. The text is confined to brief descriptions of the bridges, the chief merit in the work being found in the halftone reproductions on high grade paper of excellent photographs. While it is apparent that the author's selection of the bridges featured was designed to include the most important structures built, both railway and highway, it is also obvious that his choice was influenced by a desire to emphasize the esthetics of bridge design. The effect of the excellent workmanship in printing and press work is marred by reproductions of poorly-executed and crudely-lettered line drawings.

Odds and Ends . . .

A New Fish Story

When the Northwestern's streamliner City of Denver rolled into Chicago recently, a wild-eyed inspector called the station force to see if they saw what he saw, or if he had suddenly gone crazy. The headlight was broken, and inside, among the shattered glass, lay a dead trout! The presence of the trout was confirmed unanimously by all witnesses, and the engineman, when pressed for a solution of the mystery, could only remember that he had struck and killed an eagle in flight. The bird presumably was carrying the fish.

Baggage Problem

The Federal Savings Magazine propounds the following problem, to which it did not receive an answer. We are confident that some of the readers of this column can give the answer and the reasons why:

"A railroad allows a passenger to carry a certain number of pounds of baggage without charge and charges at a certain rate for all above that amount. Two passengers together have 350 lb. of baggage, and are charged 25 cents and 50 cents, respectively, for the excess. If the baggage had belonged to one of them, he would have been charged $1.25. How much baggage is one passenger allowed without charge? What rate is charged for the excess baggage? How many pounds did each passenger have?"

He Wants Work

B. G. Cross, superintendent of the Minneapolis, St. Paul & Sault Ste. Marie, at Bismarck, N. D., maintains that, while farmers in his section have been on relief, they are by no means averse to work. He sends us the following letter as proof:

"I heart you will fill that Spring on the North Site on the Soo linn a 1 mile and a haf ½ west of Fredonia that Spring well. I like to fell that well with, Rocks. this is the best way I think. your men tolt me about. her in Fredonia your Formen. the reason I ask you I have Just a little time and I will do the work for $95.00 it takes lot of work the well is 12 x 12 and 40 feet teep. and I will to a good chop Please let me know soon hope I git that chop so good by."

Family Railroads

The Carolina Western is indeed a family railroad, with J. L. Camp as president, P. R. Camp and W. M. Camp as vice-presidents, and J. L. Camp, Jr., as general manager. On the Georgia Northern, however, a unique situation exists, since C. W. Pidcock, Jr., is president, while his mother, Mrs. C. W. Pidcock, Sr., is treasurer. Mr. Pidcock is also president of another railroad, the Georgia, Asburn & Sylvester, which also has a woman treasurer, Mrs. Belle P. Clark.

NEWS

Train Limit Bill Over to January

House Committee then expected to hold hearings—U.S. chamber hits measure

The House committee on interstate and foreign commerce has decided to postpone until the next session of Congress consideration of the train-limit bill which passed the Senate on July 26. It is understood that the House committee will hold public hearings on the measure (S. 69) which would limit the length of freight trains to 70 cars. The Senate committee on interstate commerce reported the bill favorably without hearings, taking the position that the record was adequate in view of hearings on similar bills before previous sessions of Congress.

Meanwhile the prospect that the bill will not be acted upon by the House at this session was called "heartening from both the humanitarian and economic aspects" in a statement issued July 19 by John W. O'Leary, chairman of the executive committee of the Chamber of Commerce of the United States.

"Although proponents of the measure, which undoubtedly will come forward again, justify it," Mr. O'Leary continued, "as a safety measure, accident statistics of the Interstate Commerce Commission show that during the 15 years from 1921 to 1935, inclusive, yearly fatalities to men on duty in train service decreased from 658 to 282, even though average freight train lengths increased from 38 to 47 cars. On the other hand, fatalities at railroad highway grade crossings totalled 1,680 in 1935.

"Any bill that would arbitrarily limit the number of cars that could be included in a train would materially increase the hazards that exist at railroad grade crossings because of the increase in number of trains. Despite the activity of the railroads and the federal and state governments in eliminating highway-railroad grade crossings, reports to the Interstate Commerce Commission show that approximately 234,000 grade crossings remain. The fact that the enactment of such a bill would increase the danger that exists at grade crossings and bring about a serious menace to public safety would alone justify its defeat.

"The bill's proponents assert that since the average train length is now only 47 cars, a 70-car limit would not seriously hamper railroad operation, as it would affect only 25 per cent of the trains and would merely result in bringing trains to a more uniform length. Those familiar with railroad operation know, however, the 25 per cent of long trains carry 45 per cent of the freight car-miles. They are the typical trains on the main lines of the great railroad systems, and to restrict them to 70 cars would, it is held, be to destroy the efficiency of modern motive power and the opportunity to move commodities in bulk at low cost.

"It is estimated that a 70-car limit on the basis of 1930 traffic would cost the railroads $125,000,000 annually, and it is held that for the railroads to remain solvent this cost would inevitably have to be passed along to consumers.

"The number of grade crossing accidents, it is to be remembered, is directly related to the number of trains running on the tracks."

Rogers Confirmed

The Senate on August 17 confirmed President Roosevelt's nomination of John L. Rogers to be a member of the Interstate Commerce Commission for a term expiring December 31, 1943. A biographical sketch of Mr. Rogers, who succeeds Hugh M. Tate, appeared in the *Railway Age* of August 7, page 172.

Agency Reports June Gain

Railway Express Agency traffic in June reached 11,210,741 shipments, an increase of 700,367 over the previous month, or 6.66 per cent. This is the 42nd consecutive month that the agency has reported a progressive expansion in traffic since it started its nation-wide traffic-building efforts in 1933.

Philadelphia's Commercial Zone

The Philadelphia, Pa., commercial zone wherein motor vehicle operations would be exempt from the Motor Carrier Act's regulatory provisions, other than those relating to maximum hours of service of employees and safety of operation or standards of equipment, should be defined by the Interstate Commerce Commission to include the area within the corporate limits of Philadelphia, Darby, Pa., Upper Darby, Ridley, Chester, Low Chichester, Camden, N. J., and Gloucester City, according to the recommendations of a proposed report by Examiner A. J. Sullivan. The report was served on August 14, and like previous determinations in the New York, Chicago and St. Louis cases it would prescribe a municipal area within narrower limits than those urged by various local interests.

Labor's Signal Bill Passed by Congress

Senate agrees to amendments of House which approved measure on August 16

The Senate on August 18 completed Congressional action on the signal inspection bill (S. 29) when it agreed to amendments adopted by the House of Representatives which passed the measure on August 16. The bill which is one of railway labor's "make-work" proposals had originally passed the Senate on May 17. Among the several House amendments, was one placing inspectors to be employed under civil service regulations.

The debate in the House was brief as the bill was passed under a suspension of the rules. It was sponsored on the floor by Representative Martin of Colorado, who, as he said, was called upon with about 45 seconds notice to "pack the white man's burden and open the argument for a bill." Other speakers in favor of the measure were Representative Withrow of Wisconsin and Mapes of Michigan. The opposition in the House was led by Representatives Harlan of Ohio and Rich of Pennsylvania.

Mr. Martin described the bill briefly as one designed to "promote the safety of employees and travelers on railroads by placing certain train safety devices and signals under the control of the Interstate Commerce Commission, giving the commission power to require the installation of these devices, if, after hearing, it is deemed to be in the public interest; and to inspect them after they are installed, and also to see that they are properly maintained." The speaker went on to argue that increased train speeds have made it necessary to give greater attention to signals, and to call attention to the many safety appliances over which the I.C.C. has been given jurisdiction in the past. He saw no reason why signals should not be added to the list.

Representative Harlan opened his argument with the text of a letter in opposition to the bill which he had recently written to his House colleagues. This letter said that the bill would "open avenues to create useless and extravagant railroad expenditures, which will be added to the public living costs." The Interstate Commerce Commission's comment on the bill, the letter added, was an example of "damnation by faint praise," while the record of railroad accidents due to defective

signaling devices is a complete answer to the "safety" argument.

While riding trains in recent months, Mr. Harlan, without disclosing his "nefarious occupation as a Congressman" has been questioning railway employees about the bill. Receiving in each case "nothing but a sarcastic smile and a shrug of the shoulders," he is convinced that only members of the "signalmen's organization" are actively behind the bill—and those for "make-work" purposes. As the bill was before the house, Mr. Harlan added, no one but the signalmen would be qualified to procure the jobs which it provides.

Asked by Representative Martin of Colorado why the railroads should now be trusted to keep up with the times in safety matters in view of their past opposition to the use of various devices, Mr. Harlan conceded that "the record of the railroads prior to the World War was not the most enviable." Since that time, he added, "nobody can honestly say that the railroads have not done everything they can to promote safety."

Representative Withrow followed with a reply contending that all railway labor organizations were wholeheartedly behind the bill, not merely the signalmen as Mr. Harlan claimed. On the question of cost to the government, Mr. Withrow gave Interstate Commerce Commission estimates of $43,000 for the first year and a maximum of $67,000 per year in subsequent years. The cost to the railroads would, of course, depend upon what signaling work the commission might require them to do.

Representative Rich expressed the view that if Congress continues to place burdens on the railroads it will find that the federal government will have to take over and operate the carriers. If such an event come to pass, he added, it "will be a sorry day for this country." He went on to cite the railroad safety record in contrast to the death toll on the highways, and asserted that if additional signaling devices would promote safety, the railroads would install them "as a matter of economy, because wrecks are costly to railroads."

Representative Mapes closed the debate with a brief reply to the opposition speakers. He denied that the bill was framed so as to exclude all but signalmen from employment as inspectors, pointing out how a House committee amendment had placed such jobs under civil service. Mr. Harlan demanded a division on the suspension of the rules and the passage of the bill. The vote was 110 to 5.

July Revenues 2.6 Per Cent Above July, 1936

Preliminary reports from 90 Class I railroads, representing 78 per cent of total operating revenues, made public August 17 by the Association of American Railroads, show that those roads, in July, had estimated operating revenues amounting to $280,041,407 or 2.6 per cent more than July, 1936's $272,924,271 and 21.2 per cent less than the $355,255,661 reported for the same month of 1930.

July freight revenues of the 90 roads amounted to $223,633,456, compared with $221,203,637 in July, 1936, and $271,310,694 in July, 1930—1.1 per cent above the former, but 17.6 per cent below 1930. Passenger revenues in July totaled $32,731,408 compared with $30,523,991 in July, 1936, and $52,777,754 in July, 1930. For July, 1937, they were 7.2 per cent above the same month of 1936, but 38 per cent below the same month in 1930.

Wage Agreement Ratified

The wage agreement entered into between representatives of the non-operating brotherhoods and representatives of railroads at Washington on August 4, and providing for an increase in wages of 5 cents an hour, was ratified by the general chairman of the 14 non-operating brotherhoods at Chicago on August 14. The increase is retroactive to August 1.

Labor Executives Draft Unemployment Insurance Bill

A bill for presentation in the next session of Congress and providing unemployment insurance for railroad workers is being drafted by the Railway Labor Executives' Association, following a meeting in Chicago on August 13. The proposed bill would create a pool from which jobless railroad men would be paid not more than $320 a year. Payments would be half the recipient's salary up to $80 a month, with a minimum allowance of $7.50 a week. The railroads would pay all the cost with a 3 per cent payroll tax, estimated to provide $66,000,000 yearly.

Status of Crossing Program

The latest statement showing the status of the federal government's works program grade crossing projects reveals that, as of July 31, work had been completed on 1,275 new separations, 241 reconstruction jobs and 267 projects involving grade crossing protection by signals or otherwise. The estimated total cost of this completed work was $100,581,106, of which $98,836,834 was supplied from works program funds.

Projects under construction on July 31 included 597 new separations, 102 reconstruction jobs and 363 protection projects; these were estimated to cost $81,510,086, of which the works program funds will supply $78,405,105. Additional projects approved for construction will involve an estimated expenditure of $12,621,817, of which the works program funds will supply $11,581,857; these include 133 new separations, 23 reconstruction jobs and 350 protection projects.

I. C. Diesel-Electric Tried by St. Louis Terminal

The 2000 hp. Diesel-electric locomotive recently purchased by the Illinois Central from the Busch-Selzer Brothers Diesel Engine Company, is being tried by the Terminal Railroad Association to determine its practicability for use in heavy transfer service between East St. Louis, Ill., and St. Louis, Mo.

Soybean Show Train to Tour East

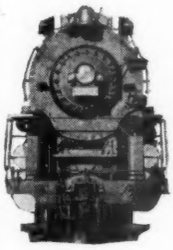
Characterized as "soybean products from the roof to the rails," an air-conditioned coach of the Pennsylvania, housing an exhibition and equipment for the demonstration of the uses and method of production of the soybean, left New Brunswick, N. J., on August 16 for a month's tour through New Jersey, Pennsylvania, Ohio, Indiana and Illinois, to make, altogether, 25 stops.

The slogan applied to the car refers not only to its special cargo and mission but literally characterizes many of the important elements in its construction and finish. The roof of the car is painted brown with soybean paint; the glossy finish of its exterior is produced by soybean varnish; the trucks are covered with a protective soybean finish. Within the

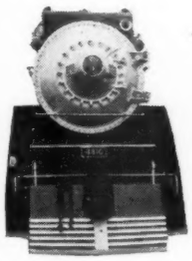
Illustrating the Uses of Soybeans in the Pennsylvania's Exhibit Car

Continued on next left-hand page

MODERN LOCOMOTIVES PROVIDE



POWER *to start heavy trains smoothly and accelerate quickly*



POWER *to maintain the sustained speeds desired*

POWER *to handle heavy trains on high speed schedules*

It is Power that is required today and only the Modern locomotive fulfills this requirement.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

car there are affixed door knobs synthetically manufactured from soybeans, as are the columns surrounding the exhibit cases and the glue which holds together the sectional plywood interior. And in the foundry at the Altoona, Pa., shops, where many of the structural parts of the car were built, soybean oil is regularly mixed in with the core sand used in casting.

The tour is under the sponsorship of the American Soybean Association, in cooperation with the U. S. Department of Agriculture, several state agricultural colleges, the National Soybean Processors Association and the Pennsylvania. Among the many stops to be made are the Indiana State Fair, September 4 to 10, inclusive, and, at the end of the tour, the York Fair, York, Pa., October 1 to 7, inclusive.

New Orleans Public Belt Hearing Adjourned to September 8

Hearings on a suspended application of the New Orleans Public Belt, which seeks an increase in switching charges from a flat rate of $6.30 per car to 1½ cents per hundredweight, with a minimum of $7 and a maximum of $10 per car, held at New Orleans, La., on August 2-6, were adjourned until September 8 by Henry B. Armes, examiner of the Interstate Commerce Commission.

Anthracite Rate Revision Ordered

The Interstate Commerce Commission, Division 2, has found unduly prejudicial but not unreasonable the rates on anthracite coal in carloads from mines in Pennsylvania on the Lehigh Valley to destinations in eastern states. The decision in No. 27048, Lehigh Valley Coal Sales Company vs. Lehigh Valley Railroad Company, et al., prescribes non-prejudicial bases of rates which the carriers are required to establish by November 12.

San Francisco Challenger to Be Added September 15

A new train, the San Francisco Challenger, will be placed in service on September 15 between Chicago and San Francisco, Cal., by the Chicago & North Western, the Union Pacific and the Southern Pacific. Like the Los Angeles Challenger, operating between Chicago and Los Angeles, Cal., over the Chicago & North Western and the Union Pacific, the new train will carry coaches, tourist sleeping cars and a lounge car.

Long Island Opens Fair Service

The first scheduled rail service directly into the New York World's Fair grounds, located between Corona and Flushing on Long Island, was inaugurated by the Long Island on August 6, chiefly for the benefit of employees of the World's Fair Corporation and contractors and their employees who are engaged at work on the site of the fair.

The schedule arranged by the road provides for 38 trains daily, except Sundays, between Pennsylvania station, Manhattan, and the temporary passenger station erected at the fair grounds. Of this number, 20 trains run eastwardly out of Pennsylvania station, and 18 westwardly out of the fair grounds station.

The average running time between the fair grounds and Pennsylvania station is placed at 15 minutes.

Rocket in Texas Service August 25

One of the three-car Rocket trains of the Chicago, Rock Island & Pacific will be placed in service between Ft. Worth, Tex., and Houston as a companion to the Sam Houston Zephyr of the Burlington-Rock Island on August 25. The Rocket, which will replace steam trains Nos. 17 and 18, will leave Ft. Worth at 7:15 a.m. and Dallas at 8:15 a.m. and will arrive in Houston at 12:25 p.m. Returning it will leave Houston at 4:30 p.m. and will arrive in Dallas at 8:40 p.m. and Ft. Worth at 9:30 p.m. Prior to inauguration, the train will be exhibited at Wichita, Kan., Enid, Okla., Oklahoma City and El Reno.

H. & M. Fare Rise Suspended

The Interstate Commerce Commission has suspended from September 1 to April 1, 1938, the effective date of the tariff whereby the Hudson & Manhattan proposed to increase from 6 cents to 10 cents its passenger fares between Hudson Terminal, New York, and stations in Jersey City, N. J., and Hoboken. The suspension order assigned the case for hearing before Commissioner Porter on September 15 at the Hotel New Yorker, New York.

C. N. Adds "Auto-Railer" Route

An addition of 70 miles in the route mileage of its recently introduced "auto railer" operation was effected by the Canadian National on August 16 when a passenger vehicle of this type was placed in regular service on the branch line between Winnipeg, Man., and Pine Falls. The schedule calls for one round trip daily, except Sundays, and allows two hours, 15 min., for a single trip, as compared with the present time of three hours, 20 min., southbound and three hours, 30 min., northbound.

Wage Parley Continues

Wage negotiations begun by representatives of the Big Five brotherhoods and the railroads at Chicago on August 11, continued during the last week. Each of the unions presented its demands for and evidence supporting a 20 per cent increase. The brotherhoods contend that their members are producing more because railroads are operating more cars, that they have more work to perform due to an "increased number of gadgets requiring attention," heavier trains are more difficult to handle, and the cost of living is increasing.

New Zealand System Issues History

The New Zealand Government Railways has published a 9½ by 12 in. book of 48 pages dealing with the progress made in its operation during the past 25 years. Made up on buff matt art paper and well bound within an engraved cover, the publication discusses in order the operation of each branch of the service, such as track maintenance, signal and electrical, stores, etc., with special emphasis on the results of experimentation and installation of new devices. Over 48 photographic illustrations supplement the text.

Preceding the main section of the work is a short history of the system since ground was broken for the first time in 1861 and a statistical survey of rolling-stock, mileage, staff, and roadway. The latter chapter points out that New Zealand, with a population of approximately 1,500,000, possesses 3,320 route miles of railroad, which gives a per capita mileage double that of Great Britain. A colored map showing existing and projected routes for each of the two islands comprising New Zealand appears at the end of the publication.

Hollywood to Put Express History on Celluloid

Paramount Pictures is at work on a new major production entitled "Wells Fargo," which depicts the history of the express business and participating carriers from 1844 to 1869, ending with the driving of the last spike on the Central Pacific-Union Pacific route at Promontory, Utah. Directed by Frank Lloyd, the "human" cast includes Joel McCrea, Frances Dee, Ralph Morgan, and Bob Burns, supported by a "wheeled" cast of Concord stagecoaches, freight wagons, and the Baltimore & Ohio's "William Galloway" locomotive. The latter is an early "single-driver" of the road which participated in the operating track exhibit of the Fair of the Iron Horse at Halethorpe, Md., in 1927.

"Wells Fargo" will be released for its "premiere" sometime next Fall.

D. & H. Police Win Match

A four-man team representing the Delaware & Hudson police won the sixth annual international police pistol tournament held at the Teaneck, N. J., range on August 14 and 15 in competition with 121 teams representing state and municipal police departments from all parts of the country. The team, which made a total score of 1,191, was made up of: J. H. Overbaugh, C. E. Hall, J. J. Russ and J. R. Herron. Mr. Overbaugh, captain of the team, shot a perfect score of 300 points. A five-man pistol team of the road's police force was pictured in the *Railway Age* of August 7.

Money for Highways

The Bureau of Public Roads, United States Department of Agriculture, has announced that state highway departments received $1,145,590,000 for highway purposes in 1936. This was an increase of $243,580,000 over the preceding year. According to the Bureau, allocations from payments by highway users in registration fees, gasoline taxes, motor carrier taxes, and tolls on state-operated bridges and ferries produced $663,886,000 or over 99 per cent of the income from state revenue sources. The Bureau went on to say that "Federal funds received amounted to $346,281,000; $14,447,000 was derived from counties and other local

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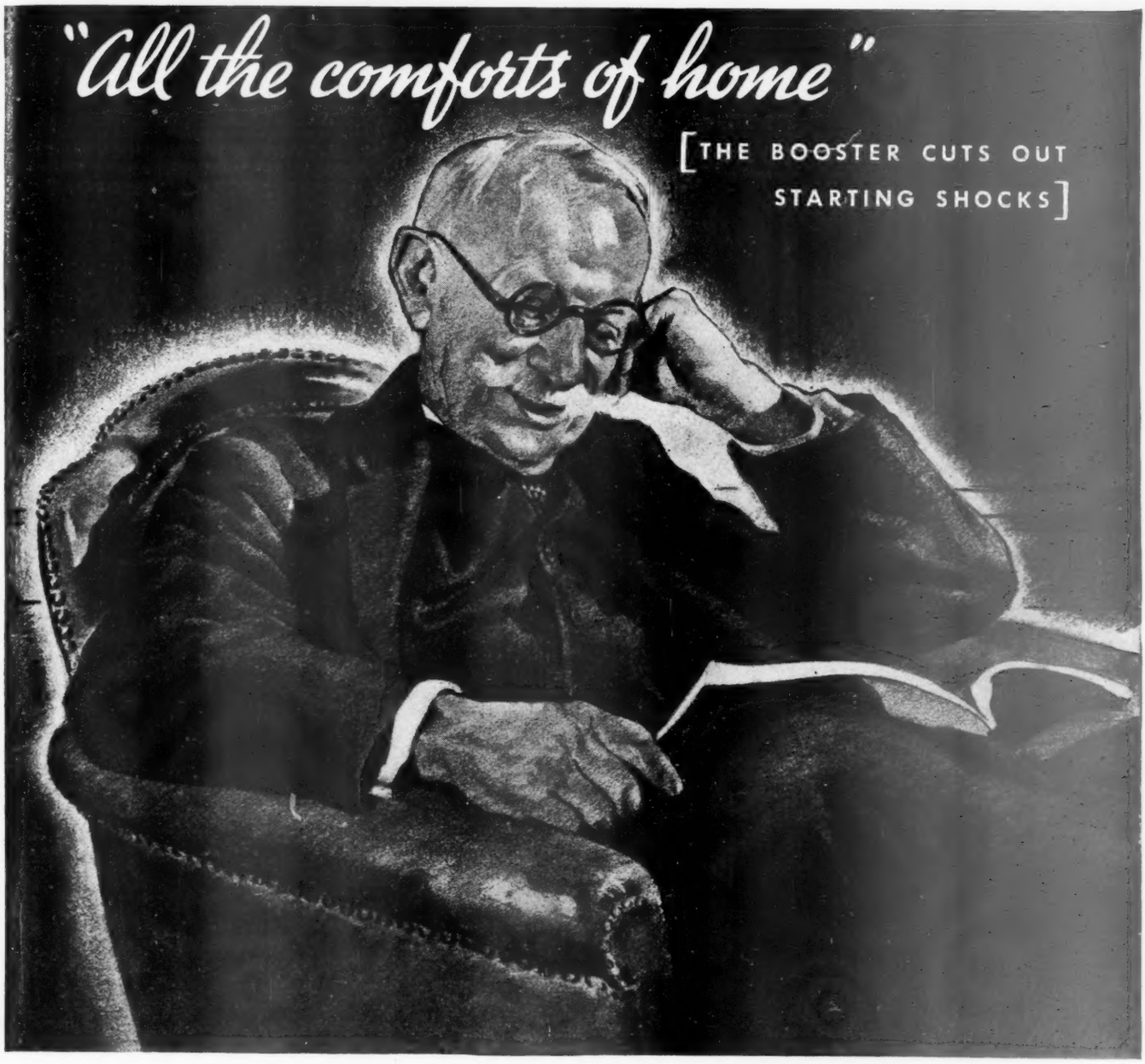
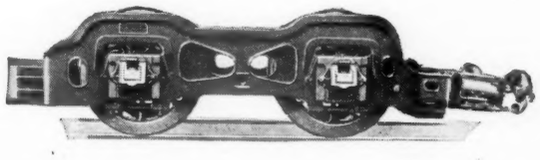


Relaxed at ease, reading, chatting or playing cards, train travel provides all the comforts of home, plus rapid transportation at low cost. » » » Thanks to the Booster, the train starts quickly and smoothly. It prevents the irritating jerks that nullify all other efforts towards passenger comfort. » » » The Booster makes boosters out of the passengers.



FRANKLIN RAILWAY SUPPLY CO., INC.

NEW YORK
CHICAGO
MONTREAL

sources; $106,235,000 from the sale of bonds and notes; and $14,741,000 was appropriated from general funds or derived from miscellaneous sources."

"State highway department expenditures," says the report, "also amounted to over a billion ($1,131,151,000), of which $607,284,000 was for construction, and $219,902,000 for maintenance. Other expenditures for equipment, administration, state police and interest on highway debt brought the total expenditure for state-administered highways to $947,085,000. Retirements of bonds amounted to $79,171,000 and $104,895,000 was transferred for use on local and park roads or was used for non-highway purposes."

Northeast Africa to Have Rail-Road-Cable Route

A joint railroad, highway, and aerial cable-way, between the port of Assab, in Eritrea, and Dessie, in Ethiopia, is now under construction, according to consular reports from Naples, Italy. Replacing the narrow trail which formerly comprised the only link between the two points, the new travel route will consist largely of a paved highway and standard-gage railway resting on the same roadbed. To carry the traffic through table-lands reaching an altitude of 2,000 meters (6,560 ft.), requiring prohibitive grades, aerial cableways, capable of carrying several hundred tons daily, will be built between heights.

Canadian Roads Extend C. & D.

As a further step in the development of free pick-up and delivery service for l.c.l. shipments, the Canadian National and Canadian Pacific have widened the area in which the service is operative to include all points located in the territory between Capreol, Ont., Sault Ste. Marie, and Windsor, on the west, and Quebec, P. Q., Levis and Megantic, on the east, and, abandoning the 375-mile maximum limit set up in the first extension of the system in August, 1933, now offer the service to all shipments within the specified area. Prior to this modification, the store-door service was limited to shipments originating in and destined for a limited number of points in Ontario and Quebec.

State Board Finds Lower Bus Fare Not Prejudicial

Declaring that approval of a tariff for a highway carrier lower than existing railroad fares, based on a difference in costs between bus and railroad operation, is not prejudicial to the competing railroad, the New Jersey Board of Public Utility Commissioners has permitted the North & South Jersey Bus Company to file a reduction in week-day fare schedule from $2.50 to $1.50 per round trip for the forty-mile route between Newark, N. J., and Asbury Park, a coast resort. In protesting the proposed reduction on the grounds that it would "create unfair competition with our railroad service," the Pennsylvania and Central of New Jersey asserted that they couldn't operate at less than the regular $2.10 round-trip rate during the week and "make it pay," by reason of the lightness of travel. In answer, the board declared that it must be assumed, therefore, that the railroad rate of $2.10 is just and reasonable since it is the minimum at which operation will pay and that the difference in highway and railroad charges lies fundamentally in the disparity in cost of operation.

The decision does not apply to week-end round-trip fares, since the special railroad charge of $1.25 is lower than the $1.50 fare of the bus company, both of which tariffs are to continue in effect.

A.A.R. Circular Redefines Well-Known Safety Terms

The September program of the Safety Section, A.A.R., includes general distribution of circular 5-544, which sets forth briefly the definite meaning of the familiar safety terms, "firm grip" and "safe foothold." Reminding railway employees that falls due to insufficient cleavage accounted in 1935 for 27 per cent of all employee deaths and 36 per cent of injuries, the circular presents specifications for handgrips and foot-holds set under photographs illustrating the position to be taken for the achievement of each.

A large poster accompanying portrays "the stretch before the fall" when a worker attempts to use his ladder in an unsafe manner.

Club Meetings

The Baltimore & Ohio and Alton watch inspectors will hold their annual staff meeting on August 25 at the Hotel Lincoln, New York. W. C. Donnelly, general supervisor of time service of the Baltimore & Ohio will preside.

The sixth annual convention of the colored division of the Norfolk & Western veterans' association will be held at Roanoke, Va., on August 28. The program includes a business session and period of entertainment. L. C. Ayers, president of the association and general superintendent of the eastern general division of the Norfolk & Western, will be the principal speaker. It is expected that over 300 colored employees will attend.

Through Routing Bill—Correction

In the issue of *Railway Age* for August 14, it was erroneously reported that in passing the through routing bill, the Senate adopted an amendment which would prohibit the Interstate Commerce Commission from considering the revenue needs of the carriers in fixing the through routes. In the final version of the bill the Senate deleted this prohibition, thereby making it possible for the commission to consider the "necessity or desirability of diverting revenue from one railroad to another" in fixing through routes. The House Committee on Interstate and Foreign Commerce has announced that the through routing bill will not be considered by it until next session and that public hearings will be held on it at that time.

Freight Car Loading

Revenue freight car loading for the week ended August 7 totaled 769,706 cars, a decrease of 12,954 cars or 1.7 per cent below the preceding week, but an increase of 41,335 cars or 5.7 per cent above the corresponding week in 1936 and an increase of 187,629 cars or 32.2 per cent above the corresponding week in 1935. All commodity classifications except livestock and ore showed decreases under the preceding week, while all commodity classifications except forest products, ore and coke showed decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, August 7			
Districts	1937	1936	1935
Eastern	149,395	146,109	122,688
Allegheny	157,429	146,087	109,478
Pocahontas ...	52,762	51,315	37,676
Southern	99,920	96,837	79,121
Northwestern .	134,620	124,622	91,489
Central Western	115,801	107,928	92,854
Southwestern ..	59,779	55,473	48,771
Total Western Districts	310,200	288,023	233,114
Total All Roads.	769,706	728,371	582,077
Commodities			
Grain and Grain Products	46,318	46,446	41,446
Live Stock	13,537	14,717	14,286
Coal	111,504	114,524	77,853
Coke	9,707	8,450	5,000
Forest Products	41,144	35,183	29,758
Ore	75,533	54,206	32,106
Merchandise L. C. L. ...	168,369	165,722	156,029
Miscellaneous .	303,594	289,123	228,599
August 7	769,706	728,371	582,077
July 31	782,660	747,529	595,297
July 24	770,980	730,981	595,572
July 17	770,075	720,359	592,672
July 10	682,205	724,277	565,502
Cumulative Total, 32 Weeks	23,509,900	20,885,014	18,562,975

In Canada.—According to the Dominion Bureau of Statistics, car loadings in Canada in the August 7 week totaled 47,739, a decline of 1,869 under the preceding week (August 1 being a holiday in the Dominion), but an increase of 1,268 over last year despite the fact that the corresponding week last year did not contain a holiday.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
August 7, 1937	47,739	23,228
July 31, 1937	49,608	23,838
July 24, 1937	49,551	24,518
August 1, 1936	46,471	22,324
Cumulative Totals for Canada:		
August 7, 1937	1,483,284	850,485
August 1, 1936	1,353,583	720,430
August 3, 1935	1,329,813	673,459

Chesapeake-Alleghany Merger is Opposed

Coming on the heels of the conclusion of a sweeping senate investigation of their holdings which are controlled by the Chesapeake and Alleghany Corporations, Robert R. Young, Frank F. Kolbe, and Alan P. Kirby, the new men in control of the Van Sweringen "empire," ran into more trouble when the Interstate Commerce Commission, on August 12, announced that, proceeding on its own motion, it would institute an investigation of the holdings of railway securities by these three men in order to determine what jurisdiction the commission may have over the Chesapeake and Alleghany Corporations as they now exist and as they are proposed to be consolidated.

The commission proposes to find out whether or not it can control the actions of holding companies which control rail-

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NO. 27 OF A SERIES OF FAMOUS ARCHES OF THE WORLD

GATEWAY TO HYDE PARK

LONDON

The principal entrance to London's largest park is a triple archway, designed by Decimus Burton in 1828 and adorned with reproductions of the Parthenon frieze. Inside is the beginning of the famous riding-track known as Rotten Row. Apsley House, on the left, contains many memorials of the first Duke of Wellington. « « « The Security Sectional Arch was among the first efforts to improve economy and increase the capacity of the steam locomotive. While the fundamental design is unchanged, it has been continuously developed with the progress in locomotive design and is today an essential factor in the operation of modern steam motive power.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists » » »

road stocks. The order of the commission specifically mentions paragraph 11, of Section 5 of the Interstate Commerce Act which provides that the commission may institute such an investigation when it believes that any company is controlling the stock of a railroad to such an extent that its control may hinder the consolidation plans of the commission. If the commission should find that such is the case, it could require the railroad stocks now held by the Chesapeake and Alleghany Corporations to be deposited with a trustee. Such action was often hinted at by Senator Wheeler's investigators during the recent hearings on the financing of the Van Sweringen "empire."

Mr. Young's attempts to merge the Chesapeake and Alleghany Corporations ran into a further snag when, on August 16, Chief Judge Samuel K. Dennis of the State Circuit Court at Baltimore, Md., issued a permanent injunction prohibiting a merger of the two holding companies. The suit was brought by Tri-Continental Corporation and Selected Industries, Inc., both investment trusts which held large blocks of stock in both companies. An appeal is expected to be taken to the Maryland Appellate Court. The Court held that the merger plan would be unfair to the holders of Class A preferred stock in the two corporations.

Further government opposition to the proposed merger of the Alleghany and Chesapeake Corporations became evident in Washington when, on August 13, the Securities and Exchange Commission announced that it had requested these corporations to amplify certain of the information which they had given to their security holders in soliciting proxies for the proposed plan of consolidation. The commission said that such action was taken because it was of the opinion that information which had been previously submitted to security holders would be misleading, unless appropriately supplemented. One matter which the commission said that it felt should be more fully disclosed was the extent to which the Young-Kolbe-Kirby interests dominate the two corporations.

"Auto Hits Train"

The Illinois Central, in a memorandum to newspaper editors, is making an effort to change the established practice of newspapers of indicating that the train hit the automobile instead of stating that the automobile ran into the train, where this was actually the case. The memorandum to editors is as follows:

"In the attached editorial from the New Orleans Item there is an idea for newspapers interested in avoiding loss of life and in promoting safety on highways.

"Grade-crossing accidents continue in spite of efforts to stop them. It is customary in writing and editing the stories of such accidents to leave the impression that the train is the aggressor. Newspaper readers are often informed that 'train strikes auto,' 'five are killed when train strikes bus,' 'five persons are trapped on trestle—three killed by train,' and the like. If headlines, news stories and editorials reported somewhat more accurately that 'train and auto crash,' 'five are killed at crossing,' 'death comes to three trespassers on rail trestle,' a change in thinking should eventually result. Instead of encouraging the thought that the train does the striking, it would be remembered that trains must follow a fixed course and cannot swerve, dodge or even stop in time.

"We commend this editorial to your thoughtful consideration. Several newspaper men with whom this idea has been discussed are already adopting a new style of reporting such accidents. Perhaps you will care to consider similar action."

The editorial which appeared in the New Orleans Item on July 24, 1937, is as follows:

"Railway officials, trying to reduce crossing accidents, wonder if the public has not been misled by years of reading that 'Train Hits Auto—Four Dead.' A recent survey revealed that despite redoubled efforts by the railways, crossing accidents are increasing. Most of them occur at crossings protected by bells, lights and other devices.

"Would it be worth while to remind motorists that auto sometimes hits train 'Mouse Viciously Assaults Peaceful Elephant' would express the railroader's point of view. The fact that the mouse is almost invariably the party demolished is the mouse's hard luck.

"The fact that the motorist is often to blame for the fatal encounter should not be cited to obscure the need for abolishing grade crossings and for full warning equipment as long as we have them. The railways are not trying to evade their own responsibility. They recognize that grade-crossings on arterial highways must go, but also that abolition of them on many branch lines and sidings is for the present impracticable. The cost would be prohibitive.

"It must be said for the railway train that it never deliberately attacks an automobile. Neither does it deviate from its straight and narrow way to deal destruction and death. It stays on its own track, and asks to be let alone. As much can't be said for many motorists.

"Their habitual disregard of warning signals, their recklessness in turning sharply onto blind crossings, and their occasional insanity in trying to beat a train to a crossing can be headlined aptly as 'Fools Commit Suicide.'"

* * *

Standard Fruit Company Passenger Train at La Ceiba, Honduras

Equipment and Supplies

LOCOMOTIVES

THE SOUTH BUFFALO has ordered six Diesel locomotives of 600 hp. from the American Locomotive Company.

THE STEELTON & HIGHSPIRE has ordered one Diesel locomotive of 600 hp. from the Electro-Motive Corporation.

THE PHILADELPHIA, BETHLEHEM & NEW ENGLAND has ordered four Diesel locomotives of 900 hp. from the Electro-Motive Corporation.

THE PATAPSCO & BACK RIVERS has ordered six Diesel locomotives of 600 hp. from the American Locomotive Company and two Diesel locomotives of 600 hp. from the Electro-Motive Corporation.

THE ELGIN, JOLIET & EASTERN has ordered seven Diesel-electric locomotives, placing two with the American Locomotive Company and five with the Electro-Motive Corporation. Inquiry for this equipment was reported in the *Railway Age* of July 24.

THE ATCHISON, TOPEKA & SANTA FE, reported in the *Railway Age* of April 10 as inquiring for 11 Diesel-electric locomotives, is now accepting delivery on this equipment, two locomotives having been ordered from the Baldwin Locomotive Works, three from the American Locomotive Company and six from the Electro-Motive Corporation.

FREIGHT CARS

THE UTAH COPPER COMPANY has ordered 15 dump cars of 30-yd. capacity, from the Austin-Western Road Machinery Company. Inquiry for this equipment was reported in the *Railway Age* of May 29.

THE TEXAS & PACIFIC has ordered 500 box cars, with an option for 500 additional, from the Pullman Standard Car Manufacturing Company and 100 hopper cars from the Bethlehem Steel Company, all of 50 tons' capacity. Inquiry for this equipment was reported in the *Railway Age* of July 31.

PASSENGER CARS

THE BOARD OF TRANSPORTATION, CITY OF NEW YORK, has awarded to the American Car & Foundry Company, in combination with the Pullman-Standard Car Manufacturing Company, a contract for 100 steel passenger cars for the Independent Subway System. The award was made at the bid price of $41,950 per car and the award was forwarded to the Board of Estimate and Apportionment for approval. Inquiry for this equipment was reported in the *Railway Age* of July 10, page 53.

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Elesco feed water heating equipment, either the one stage exhaust steam injector type or the closed type using one pump . . . can appreciably reduce the locomotive fuel and water rate for the same power output—or with the same fuel and water rate increase the power output.

Investigate its possibilities on your road.

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY INC.
60 East 42nd Street, NEW YORK
Peoples Gas Building, CHICAGO

Canada: THE SUPERHEATER COMPANY, LTD.
MONTREAL

A-1171

Superheaters « Feed Water Heaters « Exhaust Steam Injectors « Superheated Steam Pyrometers « American Throttles « Tangential Steam Dryers

Supply Trade

Edwin G. Howell has been elected vice-president of the **Merchants Steel & Supply Co.**, Chicago.

R. M. Nelson, assistant manager of the Newark works of the American Steel Foundries, has resigned to become chief engineer of the **Peerless Equipment Company,** Chicago.

The Bluefield Supply Company, Bluefield, W. Va., the **Ormand Plumbing Supply Company,** San Antonio, Tex., the **J. Gaber Company,** Houston, Tex., and **Morgan's, Inc.,** Savannah, Ga., have been appointed distributors for the tubular products of the **Republic Steel Corporation,** Cleveland, Ohio.

The United States Steel Corporation confirms the sale to the **Dominion Steel & Coal Company** of its following subsidiaries located in Canada; namely, Canadian Bridge Company, Ltd., Canadian Steel Corporation, Ltd., Canadian Steel Lands, Ltd., and The Essex Terminal Railway Company. The transfer of the properties to the new owners is to be effective September 1.

OBITUARY

E. V. Shackleford, vice-president, at St. Paul, Minn., of the Ewald Iron Company, Inc., Louisville, Ky., died on August 12, at his home in White Bear, Minn.

Construction

DENVER & RIO GRANDE WESTERN.—This company has completed the construction of a telephone line between Denver, Colo., and Grand Junction, at a cost of approximately $52,000. The construction work was performed by the Western Union Telegraph Company under an operating agreement with the railroad.

GILCHRIST LUMBER COMPANY.—A contract has been awarded by this company to the Kern & Kibbee Company for the construction of an 11-mile logging railroad in Oregon, which will connect with the main line of the Southern Pacific at a point near Mowich, Ore.

GREAT NORTHERN.—An order has been placed with the Ross & White Co., Chicago, for equipment for a locomotive coaling plant at Aneta, N. D., which the railroad will erect with its own forces.

NEW YORK, NEW HAVEN & HARTFORD.—A contract has been awarded the Ross & White Co., Chicago, for the design and construction of a 150-ton capacity, reinforced concrete, automatic-electric locomotive coaling plant and an "N & W" type electrically-operated cinder plant for Springfield, Mass. See item in *Railway Age* of May 15, page 843.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Bonds.*—This road has applied to the Interstate Commerce Commission for authority to issue and procure certification of $501,000 of bonds under its general mortgage dated December 12, 1895. The applicant does not propose to sell any of the bonds at this time.

ATCHISON, TOPEKA & SANTA FE.—*Acquisition.*—The Interstate Commerce Commission, Division 5, has authorized the Santa Fe Trail Transportation Company to acquire the operating rights and property of (1) O. C. Quesenberry, doing business as the Central Kansas Bus line, and (2) A. N. Weaver, doing business as the Weaver Truck Line. The Division has deferred action on the application of the Santa Fe Trail to purchase the operating rights and property of R. E. Estep, doing business as the Silver Star Stages.

BOSTON & MAINE.—*Bus Operations.*—Examiner Paul R. Naefe, of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that the Boston & Maine Transportation Company be permitted to continue operation as a common carrier by motor vehicle of passengers and their baggage and of express, mail, and newspapers, over specified routes in the states of Maine, New Hampshire, Vermont, Massachusetts, and New York. The proposed report also recommends that the company be permitted to operate over a specified route between Winchendon, Mass., and Baldwinsville.

Joint Board No. 189, in a proposed report to the commission, has recommended that the commission find that the public convenience and necessity require the operation by the Boston & Maine Transportation Company by motor vehicle between points in New Hampshire; between points in New Hampshire and points in Massachusetts; and between points in New Hampshire and points in Vermont over specified routes. It has also recommended that the commission authorize this company to operate between Durham, N. H., and Exeter, including intermediate points.

CANADIAN PACIFIC. — *Installation of Steamship Service.*—Examiner William J. Koebel of the Interstate Commerce Commission has recommended, in a proposed report, that the commission permit this company to install a new steamship service, to be known as the "Canadian Pacific Great Lakes Line," between a point on its line of railroad at Port McNicoll on Georgian Bay, Province of Ontario, Canada, and the Lake Michigan ports of Milwaukee, Wis., and Chicago, Ill.

CHICAGO & WESTERN INDIANA.—*Bonds.*—The Interstate Commerce Commission, Division 4, has authorized this company to sell at par and accrued interest $683,000 of first and refunding mortgage bonds, series D, the proceeds to be used for capital expenditures.

CHICAGO GREAT WESTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon operation under trackage rights over certain tracks of the Kansas City Southern in Kansas City, Kans., and Kansas City, Mo., approximately 4,200 feet.

DULUTH, MISSABE & IRON RANGE.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire the Duluth & Iron Range and the Interstate Transfer through acquisition of the capital stock. On July 1, under authority previously granted by the commission, the D. M. & N. and the Spirit Lake Transfer were consolidated into the Duluth, Missabe & Iron Range. To accomplish acquisition of the D. & I. R. and the Interstate Transfer, the Missabe proposes to issue $19,500,000 of its first mortgage bonds to the Minnesota Iron Company in exchange for its stock of the Iron Range, and $500,000 of its bonds to the Agate Land Company for the stock of the Interstate. The Missabe is now preparing and will soon file with the commission, under section 20-a, an application for authority to issue the bonds.

ILLINOIS TERMINAL.—*Consolidation, Acquisition, and Securities.*—The Interstate Commerce Commission, Division 4, has authorized the consolidation of the properties of the Illinois Terminal, the Illinois Traction, Incorporated, the St. Louis, Troy & Eastern, the Alton & Eastern, the St. Louis & Illinois Belt, and the Alton Terminal into one corporation for ownership, management and operation, and the acquisition by the proposed consolidated Illinois Terminal of the properties of the St. Louis Electric Terminal.

(2) The commission has issued a certificate authorizing acquisition and operation by the proposed consolidated Illinois Terminal of the McKinley Bridge.

(3) The commission has also granted authority to the Illinois Terminal, a proposed corporation:

(a) To assume obligation and liability in respect of the payment of the principal and interest of $7,376,000 of underlying funded debt of the Illinois Traction, Incorporated, consisting of $1,488,000, of first and refunding mortgage 5-per cent bonds of the Bloomington, Decatur & Champaign, and not exceeding $5,888,000, principal amount, of first and refunding mortgage 5-per cent bonds of St. Louis, Springfield & Peoria;

(b) To issue $25,000,000 of common capital stock and $15,000,000 of first and refunding mortgage bonds, 4-per cent series due 1967; $15,300,000 of the stock, and approximately $4,924,000 of the bonds to be issued to the Illinois Iowa Power Company in exchange for capital stocks and indebtedness of the consolidating companies, other than the underlying debt of the Illinois Traction, Incorporated, pledged under the Illinois Iowa Power Company's trust indenture of April 2, 1923, as collateral security for its bonds; $9,700,000 of the stock to be delivered to the St. Louis Electric Terminal in full payment for its physical properties; $7,376,000 of the bonds to be issued with

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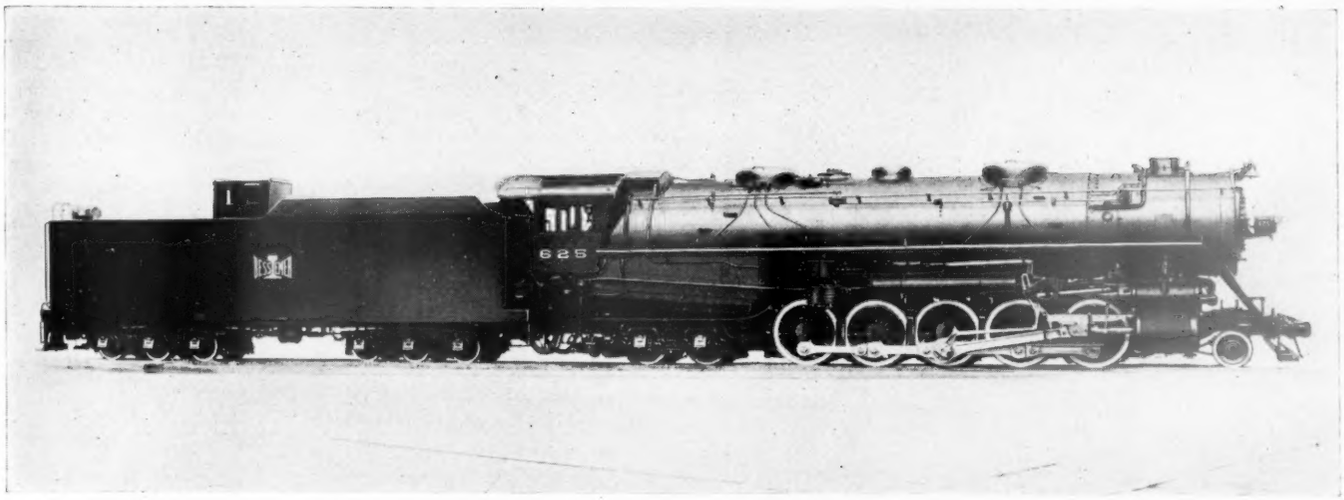


BUILT FOR BESSEMER & LAKE ERIE

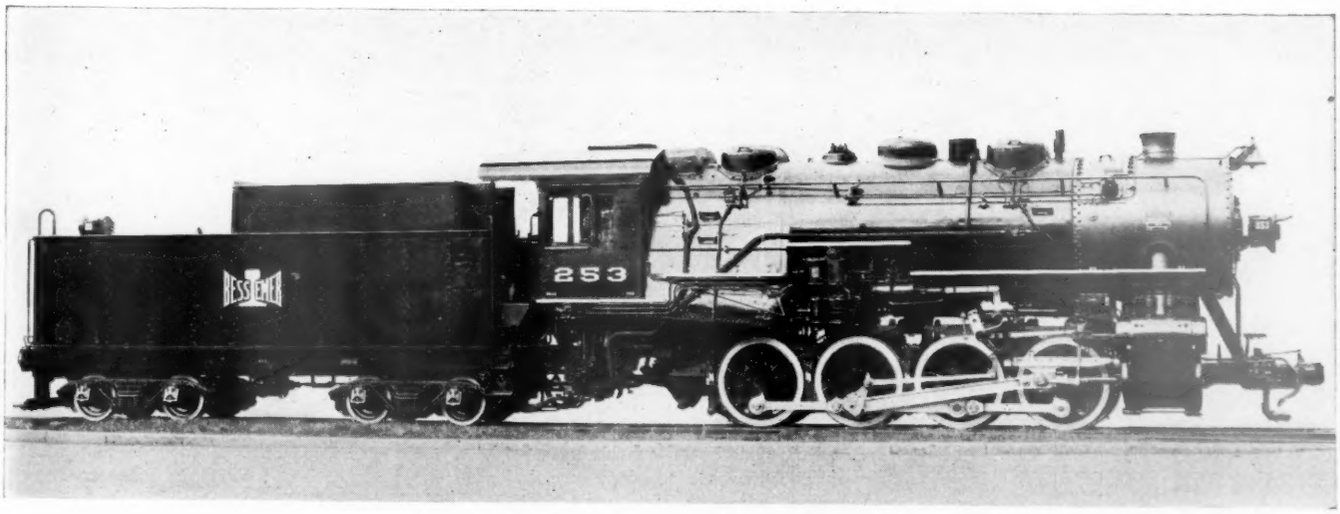
2-10-4 Type

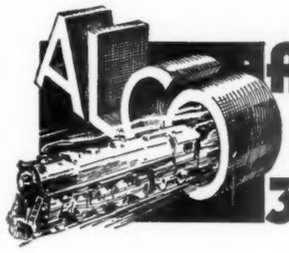
Weight on Drivers	369,100 pounds
Weight of Engine	520,000 pounds
Cylinders	31 x 32 inches
Diameter of Drivers	64 inches
Boiler Pressure	250 pounds
Maximum Tractive Power (with Booster)	110,400 pounds

0-8-0 Type

Weight on Drivers	279,000 pounds
Weight of Engine	279,000 pounds
Cylinders	25 x 30 inches
Diameter of Drivers	57 inches
Boiler Pressure	230 pounds
Maximum Tractive Power	64,300 pounds

NEW POWER — NEW PROFITS





AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET · NEW YORK · N·Y

respect to a like principal amount of the underlying debt of the Illinois Traction, Incorporated, described in (a) and $2,700,000 of such bonds to be issued to the Illinois Iowa Power Company in full payment for the physical properties of the McKinley Bridge; all the stock and bonds to be issued upon the consolidation becoming effective, with the exception of not exceeding $4,350,000 of bonds which may be issued from time to time thereafter to the Illinois Iowa Power Company in respect of a like principal amount of the publicly held underlying debt of the Illinois Traction, Incorporated, when and as acquired.

(c) To pledge not exceeding $7,376,000 of the above-described underlying funded debt of the Illinois Traction, Incorporated, with the trustees of the proposed mortgage and deed of trust of the consolidated corporation, dated January 1, 1937.

(4) The commission has dismissed that part of the application which seeks authority to execute a mortgage and supplement thereto, and to transfer and pledge properties other than securities, with the trustee of the proposed mortgage.

NEW YORK, CHICAGO & ST. LOUIS.—*Extension of Bonds.*—This company has applied to the Interstate Commerce Commission for authority to extend for 10 years the time of payment of $16,381,000 of first mortgage 4 per cent bonds maturing on October 1.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon the operation and the trustees of the Old Colony to abandon the line from Hyannis, Mass., to Hyannis Dock, 1.22 miles.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon operation and the trustees of the Old Colony to abandon a line extending from Nantasket Junction, Mass., to Pemberton, 6.43 miles.

SOUTHERN PACIFIC.—*Lease.*—The Interstate Commerce Commission, Division 4, has approved a lease by this company of the railroad property of the Union Belt of Oakland.

Average Prices of Stocks and Bonds

	Aug. 17	Last week	Last year
Average price of 20 representative railway stocks..	51.33	51.35	54.36
Average price of 20 representative railway bonds..	79.60	79.83	81.44

Dividends Declared

Cincinnati, New Orleans & Texas Pacific.—Preferred, $1.25, quarterly, payable September 1 to holders of record August 16.

North Pennsylvania.—$1.00, quarterly, payable August 25 to holders of record August 16.

Philadelphia & Norristown.—$1.50, quarterly, payable September 4 to holders of record August 20.

Chesapeake Corporation.—75c, quarterly, payable October 1 to holders of record September 8.

Chesapeake & Ohio.—Common, 70c, quarterly; Preferred, $1.00, quarterly, both payable October 1 to holders of record September 8.

Railway Officers

EXECUTIVE

W. K. Tate, assistant to the vice-president and traffic manager of the Nashville, Chattanooga & St. Louis, has been appointed to the newly-created position of assistant to the president, with headquarters at Nashville, Tenn., effective August 16.

Albert W. Hayes, assistant to vice-president in charge of traffic of the Railway Express Agency, with headquarters at New York, has been appointed executive assistant to the president, with the same headquarters, succeeding **Walter Reese. Karl A. Paine,** superintendent of transportation in the central departments at Chicago, has been appointed assistant to the vice-president in charge of traffic at New York.

FINANCIAL, LEGAL AND ACCOUNTING

Logan Paine, secretary to the president of the Western Pacific, with headquarters at San Francisco, Cal., has been appointed assistant secretary of the company.

OPERATING

L. R. Keller has been appointed assistant to general superintendent of the Western Maryland, with headquarters at Baltimore, Md.

G. B. Gowen, chief train dispatcher of the Rutland, has been appointed assistant superintendent, with headquarters at Rutland, Vt., succeeding **U. V. Mace,** deceased.

Walter Reese, executive assistant to the president of the Railway Express Agency, with headquarters at New York, has been appointed general manager of the Eastern Lakes department, with headquarters at Cleveland, Ohio, succeeding **W. K. Weaver,** deceased.

H. O. Wagner, division engineer of the Plains division of the Western lines of the Atchison, Topeka & Santa Fe, with headquarters at Amarillo, Tex., has been appointed trainmaster, with headquarters at Wellington, Kan., to succeed **T. A. Blair,** whose appointment as district engineer of the Northern district of the Western lines, with headquarters at La Junta, Colo., was reported in the *Railway Age* of August 7.

Charles D. Barwick, whose appointment as superintendent of the Shamokin division of the Reading at Tamaqua, Pa., was noted in the *Railway Age* of August 14, was born on November 3, 1890, at Catawissa, Pa. He entered railroad service on April 21, 1906, as crew caller for the Philadelphia & Reading (now Reading) at Catawissa, becoming telegraph operator, Shamokin division, on November 9, 1907. On November 8, 1917, Mr. Barwick was furloughed for military service and returned to duty as telegraph operator on June 1, 1919. He became yardmaster at Catawissa on February 1, 1926; assistant trainmaster at Gordon, Pa., on January 1, 1930; yardmaster at Gordon on August 16, 1932, and assistant trainmaster at Tamaqua on January 1, 1934. On May 1, 1934, he was transferred in the latter capacity to Gordon, becoming trainmaster at Tamaqua on February 15, 1936, the position he held until his recent appointment as superintendent of the Shamokin division.

Charles D. Barwick

TRAFFIC

A. C. Ziegan has been appointed district passenger agent of the Southern Pacific, with headquarters at New Orleans, La., to succeed **E. A. Turner,** who has been promoted to general passenger agent.

William J. Filedora has been appointed traffic agent of the Staten Island Rapid Transit, subsidiary of the Baltimore & Ohio. The position of general traffic agent has been abolished.

Berkeley Mills has been appointed general agent, traffic and transportation departments of the Virginian, with headquarters at Beckley, W. Va., succeeding **J. F. Buskey,** who has been transferred in the same capacity to Charleston, W. Va., effective September 1.

M. E. Boyd, who has been connected with the traffic department of the Elgin, Joliet & Eastern, with headquarters at Chicago, has left this company to go with the Western Pacific as assistant general freight agent, with headquarters at San Francisco, Cal., to succeed **Malcolm W. Roper,** whose appointment as assistant freight traffic manager in charge of rates and divisions was reported in the *Railway Age* of June 12.

L. Emerson Wetterau, who has been appointed assistant traffic manager of the Southern, with headquarters at New Orleans, La., as noted in the *Railway Age* of August 14, was born in 1894 at Tamaqua, Pa., and was graduated from Girard College, Philadelphia, Pa. He entered railway service in 1910 with the Southern and served in various capacities

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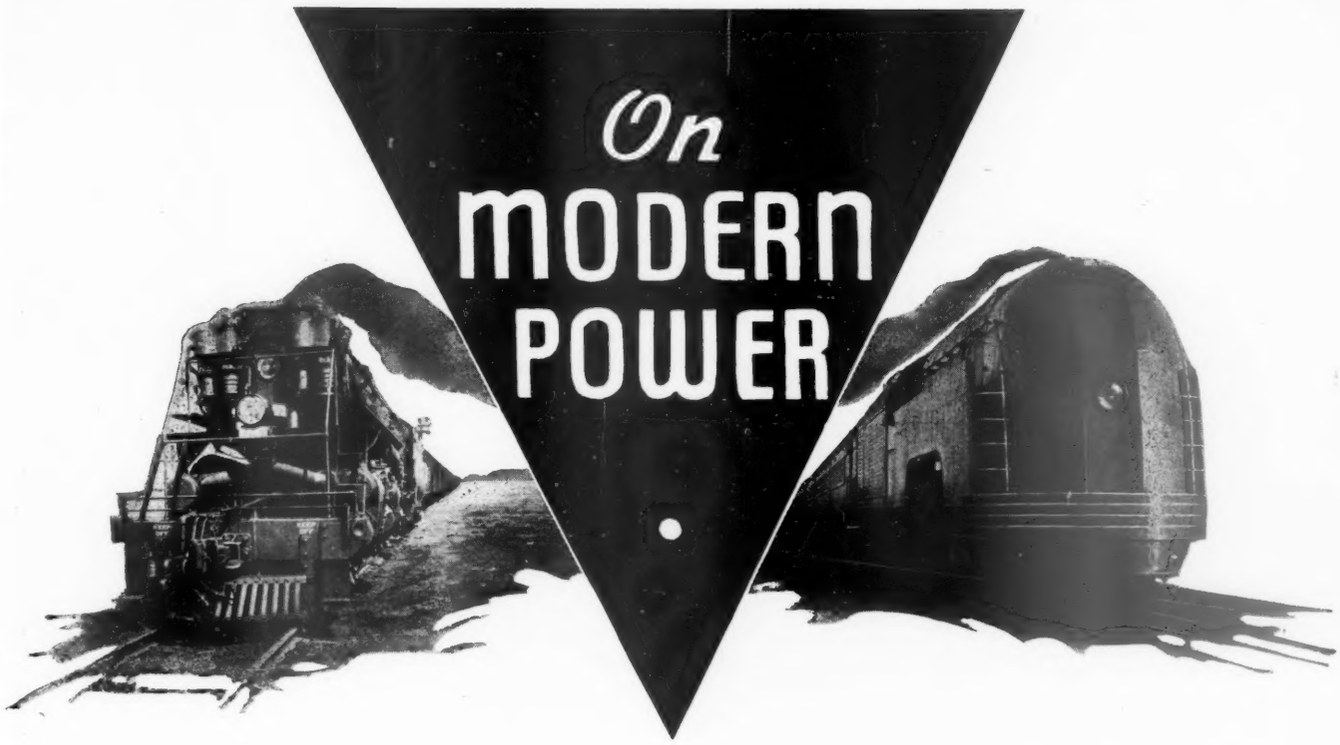

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in the traffic department at Richmond, Va.; Chattanooga, Tenn.; Norfolk, Va.; New Orleans; New York; and Lynchburg, Va. Mr. Wetterau was serving as assistant general freight agent at Knoxville, Tenn., at the time of his recent appointment as assistant traffic manager at New Orleans.

ENGINEERING AND SIGNALING

J. A. S. Redfield, assistant engineer maintenance of the Chicago & North Western, with headquarters at Chicago, has retired, effective September 1.

W. R. Parvin, division engineer of the Chicago Terminal division of the Pennsylvania, with headquarters at Chicago, has been transferred to the Middle division, with headquarters at Altoona, Pa., and has been succeeded by **Joseph M. Fox,** who has been on special duty in the offices of the chief electrical engineer and the chief engineer at Philadelphia.

B. Matheis, bridge supervisor of the First district of the Chicago, Rock Island & Pacific, has been appointed acting division engineer of the Southern division with headquarters at Ft. Worth, Tex., succeeding **S. L. McClanahan,** who has been transferred to the Oklahoma division with headquarters at El Reno, Okla., to replace **C. A. Richards,** who has been granted a leave of absence.

Carl F. Stoltz, signal engineer of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, died on August 6. Mr. Stoltz was born on December 18, 1885, and entered the service of the Big Four as a draftsman in the engineering department in May, 1906. He was promoted to assistant signal engineer in January, 1912, and then to signal engineer in November, 1913, the position he held until his death.

L. G. Harris, district engineer of the Northern district of the Western lines of the Atchison, Topeka & Santa Fe, with headquarters at La Junta, Colo., has been appointed division engineer of the Slaton division of the Panhandle & Santa Fe, with headquarters at Slaton, Tex., to succeed **J. B. Raymond,** who has been transferred to the Plains division of the Western lines, with headquarters at Amarillo, Tex., to replace **H. O. Wagner.** As noted elsewhere in these columns Mr. Wagner has been appointed trainmaster with headquarters at Wellington, Kan.

PURCHASES AND STORES

E. H. Hughes, who has been appointed purchasing agent of the Kansas City Southern, with headquarters at Kansas City, Mo., effective August 1, as reported in the *Railway Age* of July 31, is 47 years old and has been connected with the company for more than 26 years. He first entered railroad service on July 6, 1906, with the Chicago, Burlington & Quincy, serving in various capacities with this company. In September, 1908, he went with the Missouri Pacific, serving as a laborer at St. Louis, Mo., until 1909, when he was appointed sub-storekeeper at the same point. In October, 1909, he was sent to Pueblo, Colo., as storekeeper. On February 1, 1911, Mr. Hughes entered the service of the Kansas City Southern as

E. H. Hughes

storekeeper at Pittsburg, Kan., continuing in this capacity until July, 1917, when he was made chief clerk to the general storekeeper at the same point. On July 15, 1920, he was further promoted to general storekeeper at Pittsburg, which position he was holding at the time of his recent appointment as purchasing agent.

Christian J. Kubler, who has been appointed general storekeeper of the Kansas City Southern, with headquarters at Pittsburg, Kan., has been connected with this company for about 24 years. He was born on March 9, 1896, at Pittsburg, Kan., and entered railway service with the Kansas City Southern on July 1, 1911, as a store department laborer. From July 1, 1912, to March 1, 1916, he was a warehouse man, then becoming a clerk. On September 16, 1917, he entered the United States Army and served with the railway engineers until May 1, 1919, then

Christian J. Kubler

returning to the Kansas City Southern as a clerk in the stores department. On June 16, 1923, Mr. Kubler was appointed an accountant and on October 16, 1930, he became general foreman, which position he was holding at the time of his recent appointment as storekeeper, effective July 31.

MECHANICAL

William L. Trout, general master mechanic of the Minneapolis & St. Louis, who has been promoted to superintendent of motive power, with headquarters at Minneapolis, Minn., was born at Altoona, Pa. After a public school education in that city he entered railway service with the Pennsylvania on January 3, 1895, serving as an apprentice, machinist and roundhouse foreman at various points until October 31, 1913. At that time he left the Pennsylvania to go with the Western Maryland as general foreman in the mechanical department at Cumberland, Md., holding this position until February 28, 1915. On that date he severed his connections with the Western Maryland to go with the Baltimore & Ohio, where he served as general foreman in the locomotive department and acting master mechanic at Philadelphia, Pa. On January 1, 1916, he entered the service of the Long Island (part of the Pennsylvania) as general foreman in the car department at

William L. Trout

Jamaica, N. Y. From September 1, 1918, to June 31, 1924, he served with the Galena Signal Oil Company as a mechanical expert at Chicago. At the end of this period he entered the service of the Uintah Railway as superintendent of motive power at Atchee, Colo., holding this position until June 31, 1925, when he resigned to become a special representative in the railway department of the Hulson Grate Company. From September 1, 1926, to December 31, 1932, he was a sales representative for the Gustin-Bacon Manufacturing Co. On February 1, 1935, he entered the service of the Minneapolis & St. Louis as a motive power inspector, being promoted to general master mechanic on March 1, 1935, which position he held until his recent appointment as superintendent motive power.

OBITUARY

Thomas Spencer Sprague, freight traffic manager of the Panama Railroad, with headquarters at New York, died on August 13 at Mountainside Hospital, Montclair, N. J., following a long illness. Mr. Sprague was 60 years old.